

Bridges to the Future



Annual Report 2006

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

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Message from the Director

This an exciting time at the Rhode Island Department of Transportation. In late December 2006, Governor Donald Carcieri placed his trust in me to lead the Department with my appointment as Director. I look forward to working with the staff as we take the next great steps toward improving Rhode Island's transportation infrastructure.

With an annual budget of \$350 million, RIDOT is one of the largest agencies in State government, and as such, there is a need for a great commitment to fiscal integrity, accountability and customer service. Every employee at RIDOT shares the common goal of completing an impressive array of projects and providing Rhode Islanders with a safe and efficient transportation network.

Much of the Department's success will be related to the progress on major projects. In 2006, RIDOT had many watershed events that captured the attention of all Rhode Islanders.

Topping the list has to be the explosive demolition of the old Jamestown Bridge. In 2006 RIDOT was able to fulfill the promise of tearing down the aging structure, which has been out of service since 1992 when the adjacent Jamestown-Verrazzano Bridge was opened for traffic.

Two successful major detonations in the spring drew scores of people along the shores of Narragansett Bay to watch the explosives erase a

piece of Rhode Island history. Numerous other smaller detonations followed, and at the close of 2006 the bridge was gone and all that was left was the recovery of concrete debris to be added to the three artificial reefs RIDOT built throughout the summer.



Director Jerome F. Williams

Another spectacular event took place in August with the floating of the new Providence River Bridge for the Iway project. The major undertaking is relocating a stretch of I-195, one of the busiest highways in the state. The network arch bridge was built on a former Navy pier at the Quonset Business Park while work continued in Providence. In what was a great feat of engineering, the bridge was placed on barges and floated up the Bay to its new home. The Department eagerly anticipates the initial use of the new bridge in late 2007.

Other major road projects moving ahead briskly include the relocated Route 403. Connecting to Route 4 in East Greenwich, this new four-lane limited access highway will provide direct access to the Quonset Business Park, a growing industrial park with airport and port facilities. We expect to shift traffic onto the full highway in 2008, far earlier than original projections.

RIDOT has been able to accelerate the Route 403 project due to the use of GARVEE (Grant Anticipation Revenue Vehicle) bonds. The

GARVEE concept enabled the State to borrow in anticipation of future Federal Highway Aid. This resulted in the availability of funds sooner for various projects including the Iway, a new segment of the Washington Bridge (to carry I-195 East), the Sakonnet River Bridge, and the Freight Rail Improvement Program (FRIP).

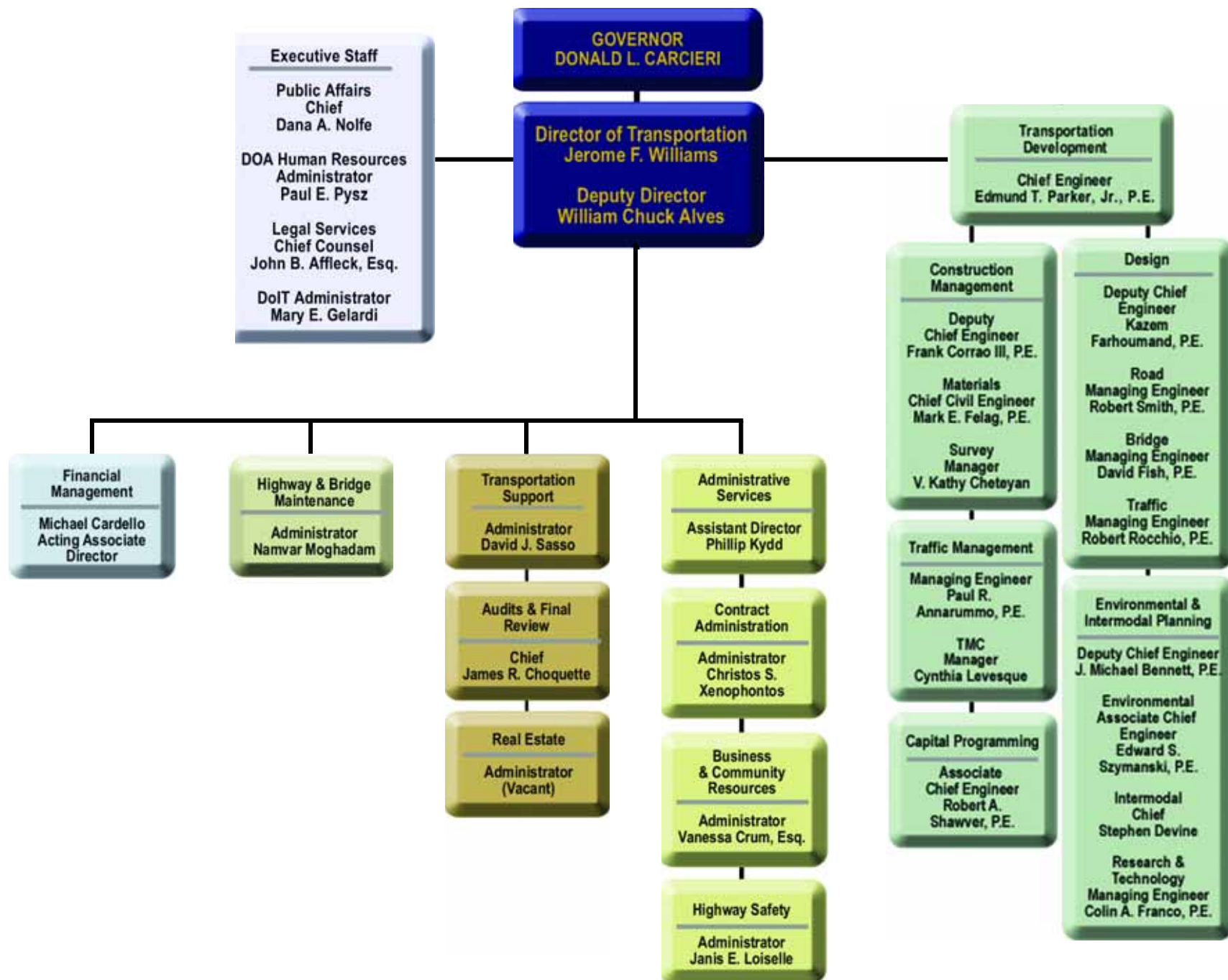
Speaking of the FRIP, a new rail line linking Quonset to the national freight rail network, RIDOT marked significant milestones in 2006 in the area of intermodal transportation. The FRIP was dedicated in October, coming on the heels of a dedication of the Pawtucket Layover Facility in July and a groundbreaking for the Warwick Intermodal Station. The Pawtucket facility is a repair and staging area for Massachusetts Bay Transit Authority (MBTA) trains. Those trains will eventually be stopping at the Warwick station, which will be linked to T.F. Green State Airport via an elevated structure featuring moving sidewalks. RIDOT also welcomed the expansion of MBTA service to Providence, including the addition of weekend service.

RIDOT in 2006 also advanced projects to support Rhode Island's growing bicycle path network. New segments along the Blackstone River Bikeway and Woonasquatucket River Bikeway are under construction and work is ongoing on a new pedestrian foot-bridge over I-195 to link Providence's East Side to India Point Park.



The above chart shows the boards and commission the RIDOT Director serves on.

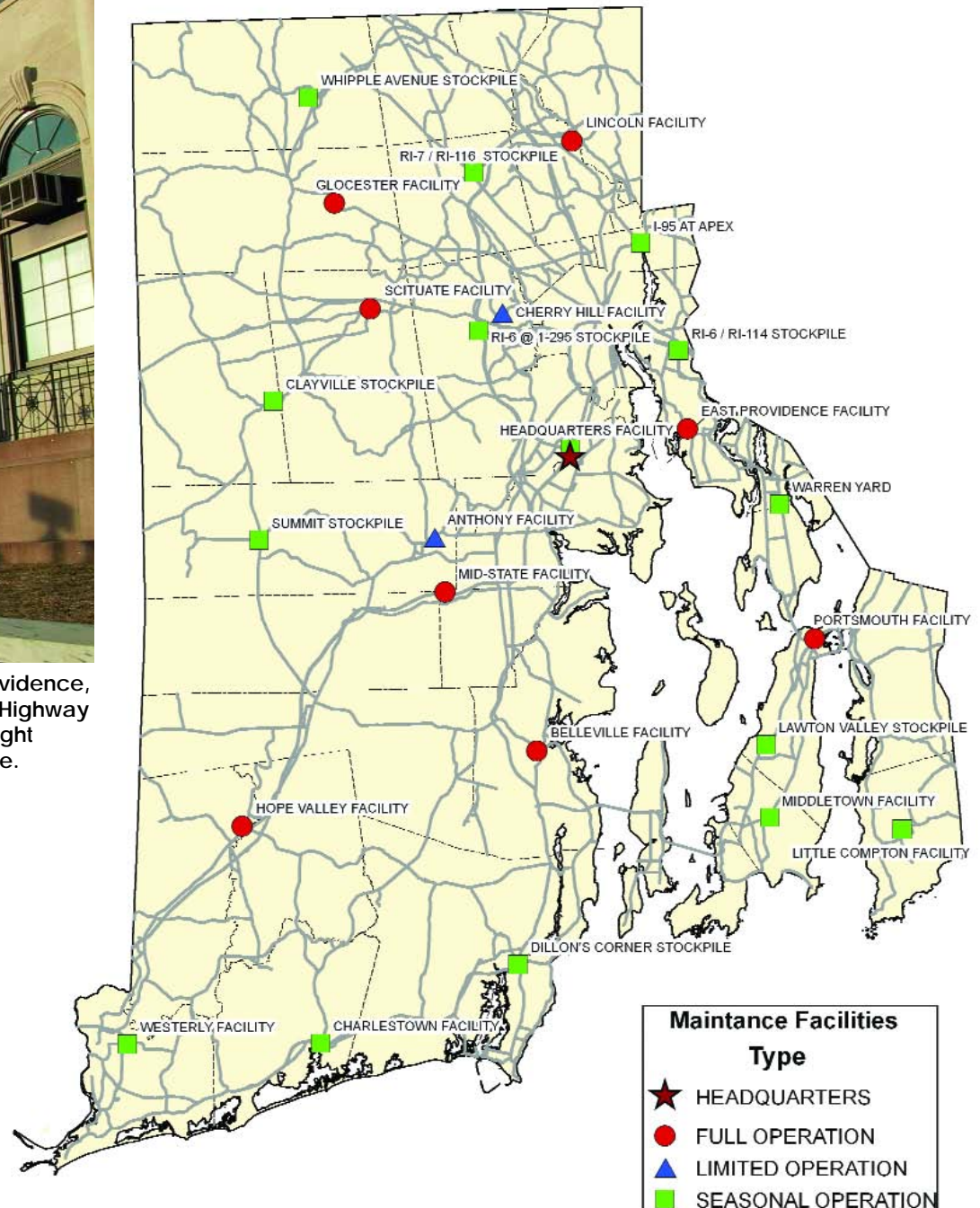
RIDOT Organizational Chart



RIDOT office and facility locations



Above, RIDOT's main office is located at Two Capitol Hill in Providence, directly across the street from the State House. Below, RIDOT's Highway & Bridge Maintenance headquarters in Warwick. The map at right shows the location of all RIDOT maintenance facilities statewide.



Iway (I-195 Relocation Project)

Iway's new Providence River Bridge rolls and floats to its permanent home

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The Iway, or I-195 Relocation Project, is one of RIDOT's largest projects ever and will result in major changes to two Interstate highways running through Providence. In addition to correcting design and safety deficiencies along I-95 and I-195, the project will significantly impact the skyline of Providence.

The most dramatic, immediate change brought about by the Iway came with the August installation of a 400-foot network arch bridge over the Providence River. The \$15 million Providence River Bridge is considered the signature piece of the Iway project.

The bridge was assembled about 12 miles south of Providence on a former Navy pier which is now being used as a shipping port. In a week's time, the bridge was jacked to a height of 30 feet and Self Propelled Modular Transporters (SPMTs)



Photo: Chuck Aubé

Above, the new Providence River Bridge, shown the day after it was set into place just south of the Fox Point Hurricane Barrier in Providence. With the bridge assembly taking place off-site, workers were able to prepare the concrete piers at the same time.

were placed underneath. These devices were used to “drive” the bridge off the pier onto two 300-foot barges. After the bridge was secured, the barges were floated up Narragansett Bay and into the Providence River. The next day the barges were positioned under the bridge's piers and, using a combination of ballast and the falling tide, were set into position.



Photo: Charles St. Martin

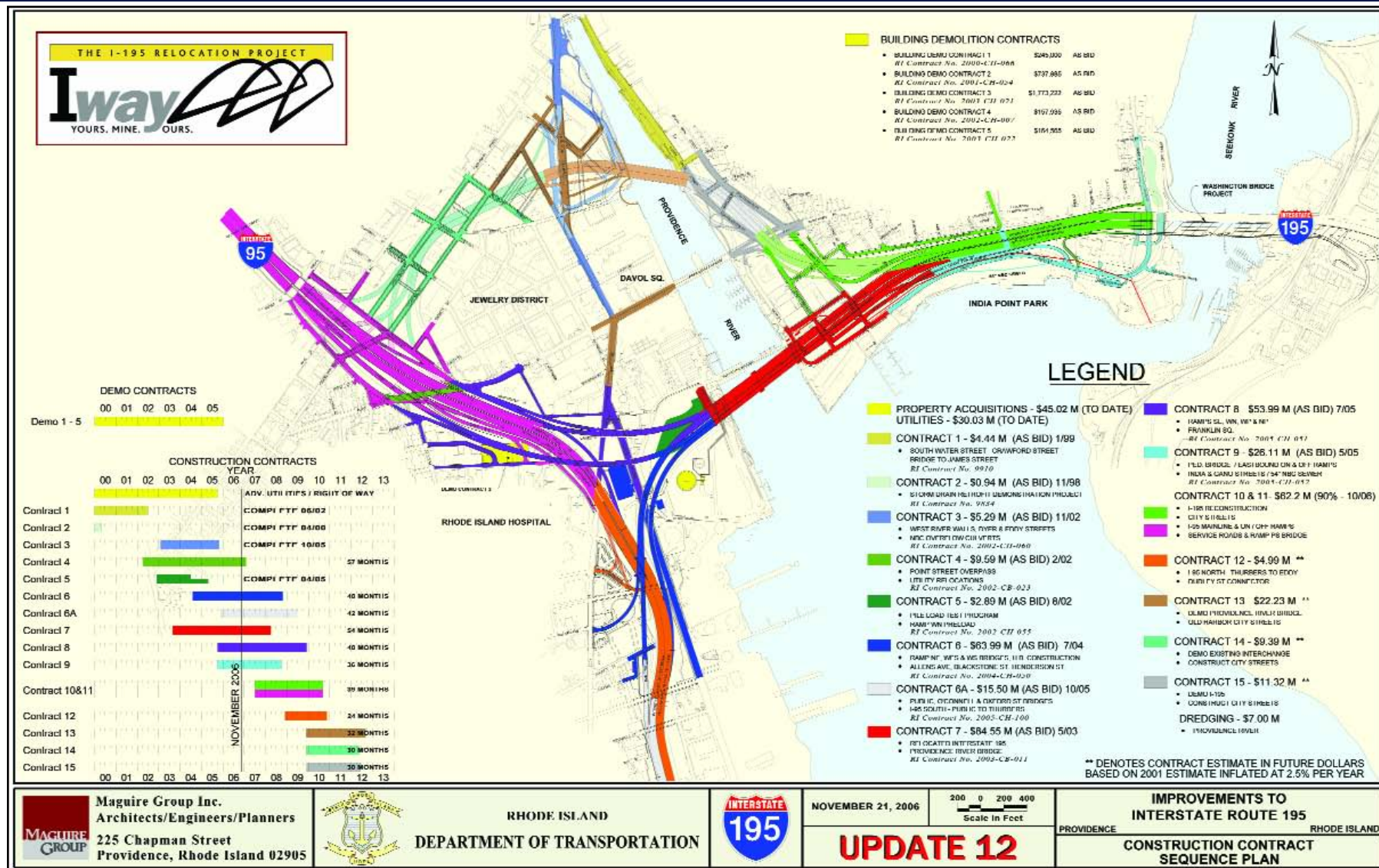
A close-up shot of one of the 600-ton lifting jacks used to raise the bridge.



Photo: Charles St. Martin

Principal construction on the Iway

Workers for bridge transport company Mammoet guide a jack assembly as it is hoisted atop a lifting tower.



The above plan shows the status of the 16 contracts that make up the \$550 million Iway project and the alignment of new roads and ramps.

began in 2000. In late 2006, the project was 50 per cent complete. Ten project segments totaling \$275 million have been advertised and awarded – five are finished, five are active. RIDOT will seek bids for five more segments totaling \$90 million. The entire cost of the project, including land acquisition, utility work and demolition of existing highway structures, is about \$550 million.

The Iway will feature one mile of new I-195 along a new alignment from the Washington Bridge to the I-95 and I-195 interchange, 1.5 miles of reconstructed I-95 from Thurbers Avenue to Broadway, a new interchange between the two Interstates and new bridge and ramp structures.

The project will address the issue of a lack of adequate lanes and shoulders, reduce accidents and

weaving problems, and remove a visual obstruction within the downtown area. RIDOT expects the Iway will go a long way toward alleviating congestion problems in Providence.

Once the highway is completed sometime in late 2009/early 2010, the old highway structures will be removed. This will free up 40 acres downtown,

Continued on next page

Iway (I-195 Relocation Project)

Continued from previous page

with slightly more than 19 acres of property for development. The new area also provides enhanced opportunities for public access and an extension of the city's river walk system. The City of Providence in 2006 hosted a design competition for the public parks section of the land.

8 The RIDOT webpage (www.dot.state.ri.us) has a wealth of information about the project, video clips of the bridge installation and photographs of the project at each step of the process. Of particular interest are computer animations (www.dot.state.ri.us/projects/construction/195relo/) that offer a virtual drive on the Iway and videos of how the highway will look when superimposed on images of the waterfront. Final completion is expected in 2012.



With the bridge lifted to a height of 30 feet, the SPMTs drive under it in preparation for moving it.



Photos: Chuck Aube

Dawn breaks over Davisville Pier 2 on the day the Iway's new Providence River Bridge is rolled onto two barges using Self Propelled Modular Transporters (SPMTs).



Workers from Mammoet monitor the progress of the SPMTs as they carry the bridge to the edge of the pier and onto ramps leading to the barges.



Illustration: RIDOT GIS

This map shows the route the new Providence River Bridge took up Narragansett Bay.



Photo: Charles St. Martin

A worker severs a connection between the bridge and a beam on the barge after the bridge was lowered into place.



Photo: Chuck Aube

During the float, the new Providence River Bridge draws a crowd of onlookers at Conimicut Point Beach in Warwick as it rounds Conimicut Light.



Photo: Chuck Aube

The new Providence River Bridge, the "signature" piece of the entire Iway project, floats up to the Fox Point Hurricane Barrier in Providence.

Washington Bridge Replacement

New eastbound span carrying I-195 reaches major milestone in 2006

The replacement of the Washington Bridge carrying I-195 Eastbound reached a major milestone this year as traffic was shifted onto the newly constructed bridge in September.

The bridge replaces a 75-year-old structure that was showing signs of advanced deterioration. Given the high traffic volumes, poor condition of the concrete and the estimated cost of a seismic retrofit, RIDOT announced in 2001 that it would replace the bridge.

Fortunately there was a large enough gap between the eastbound and westbound bridges that RIDOT was able to construct the first phase of a new bridge between the two structures without impeding traffic. Traffic lanes widths have been reduced, but same number of available lanes was kept throughout the project.

The opening of the bridge signifies the start of the second phase of the \$42 million project. Over the next two years, workers will add onto the new



Photos: Chuck Aube

The Washington Bridge as seen from the East Providence side of the Seekonk River. The historic facade will be retained as work progresses to develop a linear park on portion of the old bridge.



Above left, work is progressing on demolition of the southern span of the Washington Bridge, with the new span adjacent to it on the right. Above right, workers pour the concrete deck of the new bridge, which carries I-195 East over the Seekonk River. The new bridge segment opened in September 2006.

bridge to make it wide enough to accommodate five lanes of travel with three through lanes and two exit lanes (one for Exit 4 and one for Exit 5). Traffic counts total 90,000 vehicles on the bridge each day.

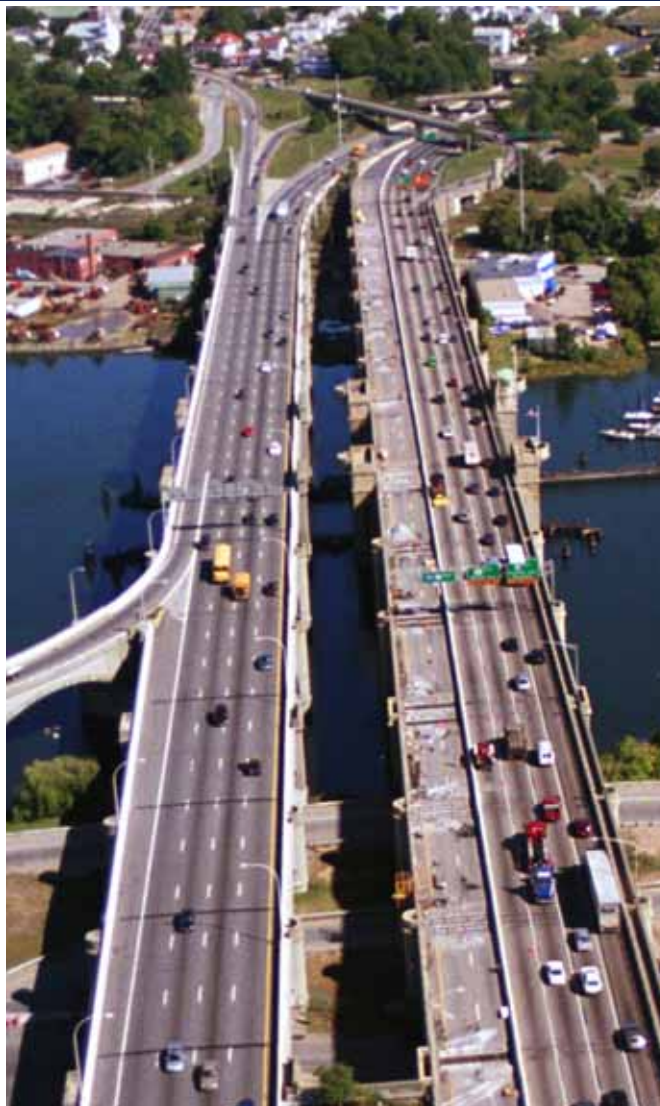
Final completion of the new bridge is expected in 2009.

The Washington Bridge project is separate from the Iway (I-195 relocation) project. The two will work in concert however, providing a modern and efficient means of highway travel along Providence's waterfront.

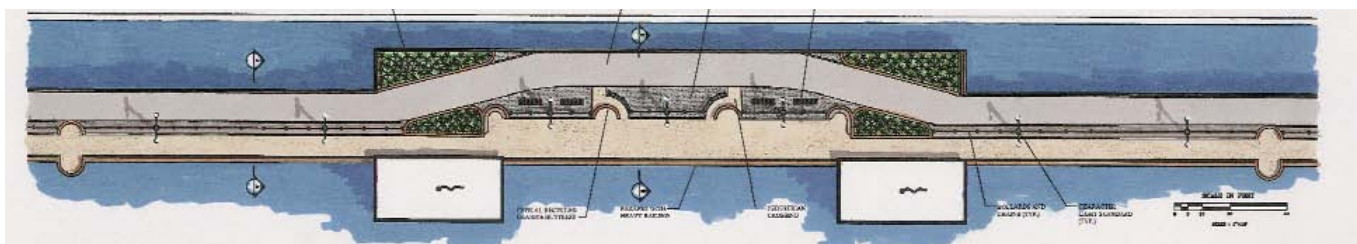
When the bridge was originally built in the 1930s, bridge construction technology was not as sophisticated as it is today. Open-spandrel concrete arch construction was considered state-of-the-art then, and while it has lasted over 70 years, is showing significant deterioration. Designed to meet modern structural and seismic standards, the new bridge will be made of concrete and steel.

Once the project concludes, RIDOT will seek bids for a project to turn a portion of the old bridge into a linear park and bikeway bridge to carry the East Bay Bike Path from Veterans Memorial Parkway in East Providence to India Point Park. The existing bridge has a protected path, but it is very narrow and the riding surface is deteriorated.

The new structure will be separated from the highway, making for a more pleasurable riding experience. It will include an 11-foot wide bike path and 7-foot wide pedestrian walkway with a sweeping view of the Providence Harbor.



The image at left shows the Washington Bridge at the start of the project. At right, a rendering of how the project will look when completed. Since the first image on the left was taken, RIDOT has opened a new bridge section.



A rendering of the linear park and bikeway that will be built on a reclaimed section of the Washington Bridge.

Relocation of Route 403

First half of new limited access road opens this year

Construction of a new limited access highway leading to the state's largest industrial park is moving ahead briskly with the first major section opened to traffic in June and work progressing on schedule for future sections.

The new 4.5-mile highway is being built to provide a direct access to the Quonset Business Park in North Kingstown. The site of two former Navy bases, this 3,000-acre property is home to a developing industrial park.

The industrial park is currently accessed by Route 1 (Post Road) and Route 403, the latter being the primary access from Route 4, about two miles south of I-95. The new Route 403 will take traf-



Photos: Chuck Aube

These new bridge abutments will carry the relocated Route 403 in North Kingstown over Amtrak's Northeast Corridor.



Construction is underway on a new section of Route 403 close to where it will join Route 4 North.

and a busy commercial district.

Construction of the \$175 million project was split into two major phases with the first segment encompassing the southeastern end of the road, a new interchange with Route 1 and a reconfiguration of access roads in the industrial park. Construction on this phase started in 2001 and most contract segments are substantially complete. This phase also included the construction of a new transfer station for the Town of North Kingstown, as the former transfer station was in the path of the new highway.

RIDOT is focusing its attention on the second phase, which began construction in 2004. This segment includes a new bridge to carry Davisville Road over the new Route

Route 403 Statistics

Freeway Length: 4½ miles

Interchanges:

Route 4
West Davisville
Post Road

Posted Speed Limit: 45 - 50 mph

Number of Travel Lanes: 4, 2 in each direction

Total Estimated Project Cost: \$175 Million

New bridges: 16

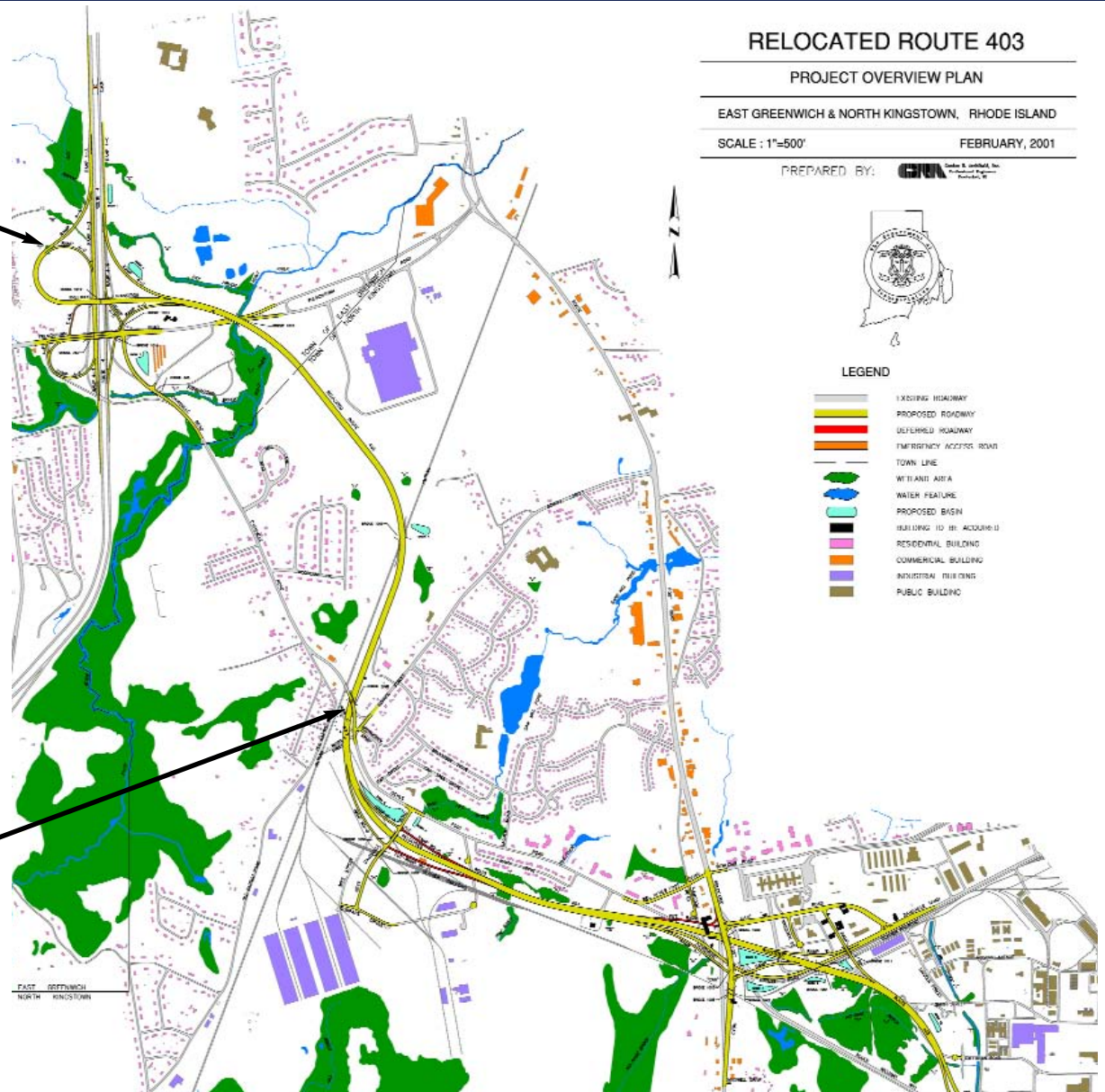
Rehabilitated bridges: 1

fic off the existing Route 403, which passes through a primarily residential area, and provide direct highway access from Route 4.

Another new feature should help ease traffic on Route 1, which is North Kingstown's primary commercial district. The new Route 403 will include an on-ramp from Route 4 north. This will provide a better means of access for trucks and other park-bound traffic than the current primary alternative from the south, that being sections of Route 1 which include both windy, suburban sections



These computer-enhanced images show how the new Route 403 will look when complete. Above, the new interchange with Route 4. Below, a portion of the second phase of the new Route 403 with the new Davisville Road overpass near the Amtrak line with the new highway passing underneath.



The map above shows the layout of the new Route 403 with new roadway in yellow.

403, a new bridge to cross over Amtrak's Northeast Corridor and a new interchange with Route 4.

As of late 2006, the second phase was about 50 percent complete. It is expected to open at the end of 2008 with the final paving coat to be applied in Summer 2009.

In total, more than a dozen bridges were constructed or rehabilitated. The entire length of the highway and all interchanges will be heavily landscaped with larger-than normal caliber trees planted to make a more immediate impact than smaller nursery stock would.

Sakonnet River Bridge Replacement

Advance work begins in preparation for replacing aging structure

Another major bridge in which RIDOT is involved with is the replacement of a vital transportation link for residents and tourists driving to Newport and across Southeastern New England.

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The existing Sakonnet River Bridge, which carries Routes 24 over the Sakonnet River, is 50 years old and in need of extensive rehabilitation. RIDOT is using two design alternatives – one with steel beams, another with concrete beams – and will actually bid both options. The purpose of having dual designs is to guard against rising materials costs and allow RIDOT to choose the most financially attractive option. The bid process should start in late 2007.

Preliminary work will begin in late Spring 2008 on the project and will last four construction seasons. RIDOT expects to have the bridge open to traffic by 2011, with the demolition of the old bridge scheduled for 2012. The new bridge will be built on



Photo: Pineapple Studios/Rendering: Newport Collaborative Architects

An aerial view of the Sakonnet River looking west with an illustration of the new bridge superimposed on the existing landscape.

an alignment just to the south of the existing bridge, and its construction will have minimal impact to the estimated 40,000 vehicles that traverse the bridge each day.

The new bridge will have wider lanes and shoulders, as well as a 13-foot-wide shared-use path for cyclists and pedestrians to use. Long-ranging planning efforts underway by RIDOT and other agencies include the possibility of a bike path along the west side of Aquidneck Island and in Tiverton that will connect with the shared-use path on the bridge.

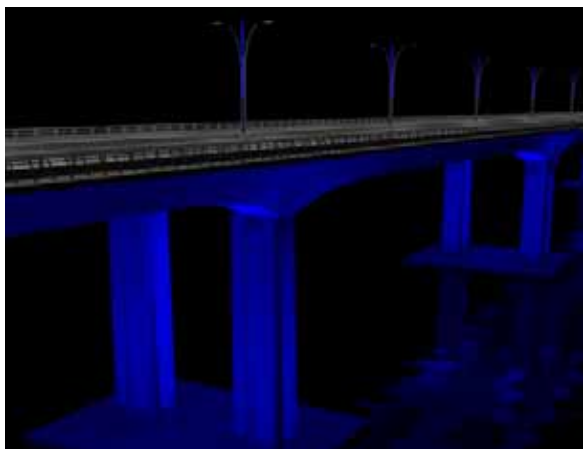
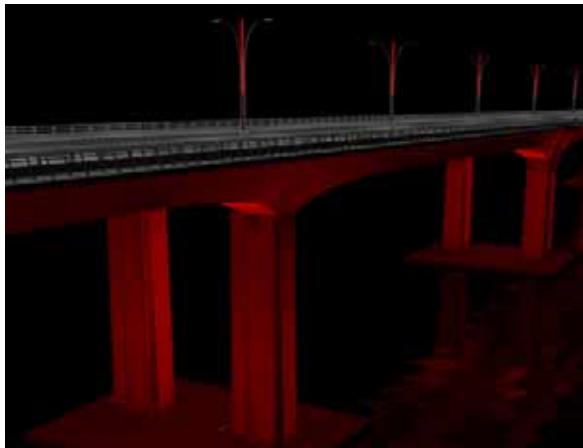


Photo: Chuck Abue

Workers set "hold down" piles for a foundation test program.



A rendering of the shared-use path that will be built on the north side of the bridge.



The LED lighting system planned for the new Sakonnet River Bridge also will accent the structure's piers.

The project also calls for a parking area and a boat ramp on the Tiverton side of the bridge.

The first step in the process began in 2006 involved pile driving to determine the best type of supports to use for the bridge. Also, RIDOT started work on demolishing the old Sakonnet River Railroad Bridge. That bridge, just to the north of the vehicular bridge, is considered a navigational hazard. Its swing-span design has been stuck in the open position since 1988 when it was hit by a barge.

Other preliminary work includes building a new approach for Route 24, leading up to the bridge on the Tiverton side. Additionally, a new bridge to carry Main Road over Route 24 will be built by the end of 2007.

Aside from having a modern bridge to drive on, motorists will find something else new when they drive over the bridge at night. RIDOT is planning to install a series of light-emitting diode (LED) lights on the median light fixtures and on the supporting piers. RIDOT will be able to change the colors of the lights remotely to accommodate seasonal or holiday themes.



A cross section view of the proposed bridge using steel beams.



The bridge will use a unique lighting system for the piers and median traffic lights that are composed of light-emitting diodes (LEDs) that change colors.



A view from the water of a lookout on the shared-use path.

Freight Rail Improvement Program

Long-awaited freight rail service line ready for business

Rhode Island's rail system took a major step forward in 2006 with the completion of the Freight Rail Improvement Project (FRIP), an effort some 15 years in the making that will allow the state to enter into the freight rail business.

The 22 miles of track, much of it running on a third line independent of the Northeast Corridor's two passenger lines, were dedicated at a ribbon cut-

ting ceremony on October 19, 2006 at the Port of Davisville in the Quonset Business Park in North Kingstown. The sprawling industrial park, site of two former Navy bases, now has a valuable piece of transportation infrastructure that will help existing park businesses and possibly attract new tenants.

RIDOT began looking at rail expansion in the early 1990s, at the time Amtrak was moving forward with electrification of the Northeast Corridor and launching a high-speed rail service. The initial plans had no provisions for freight rail operations, and without the improvements that were made to accommodate both RIDOT's and Amtrak's goals, the window of operation for freight rail would have



Photos: Chuck Aube

A section of the FRIP in what is called the Boat Section in Providence, at which a special concrete base was needed due to high groundwater.



Above left, a worker guides a deck section near the Wellington Avenue Bridge in Warwick. Above right, a view inside one of the tri-level automobile transport rail cars to be used on the FRIP.

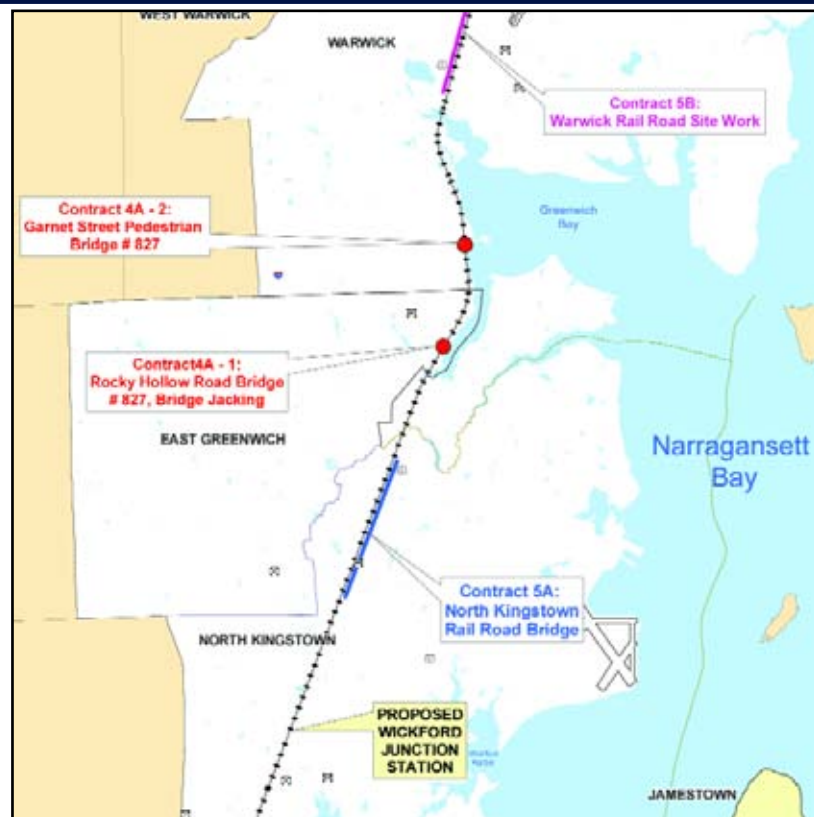
been only about five hours during the early morning hours.

One of the outcomes of talks between the two agencies was that a third track was needed to add capacity to the line. With the exception of a few short stretches of shared track, the FRIP met the third rail goal.

The first beneficiary of the FRIP will be NORAD, a company that imports Subarus,

Volkswagens, Audis and other vehicles. The company will now be able to make use of tri-level automobile train cars to move their vehicles. Since the FRIP connects to the national freight line network in Central Falls, Rhode Island has what it needs to compete with other ports on the East Coast.

The \$225 million project was funded through Federal earmarks from the Federal Railroad Administration (FRA), Federal Highway

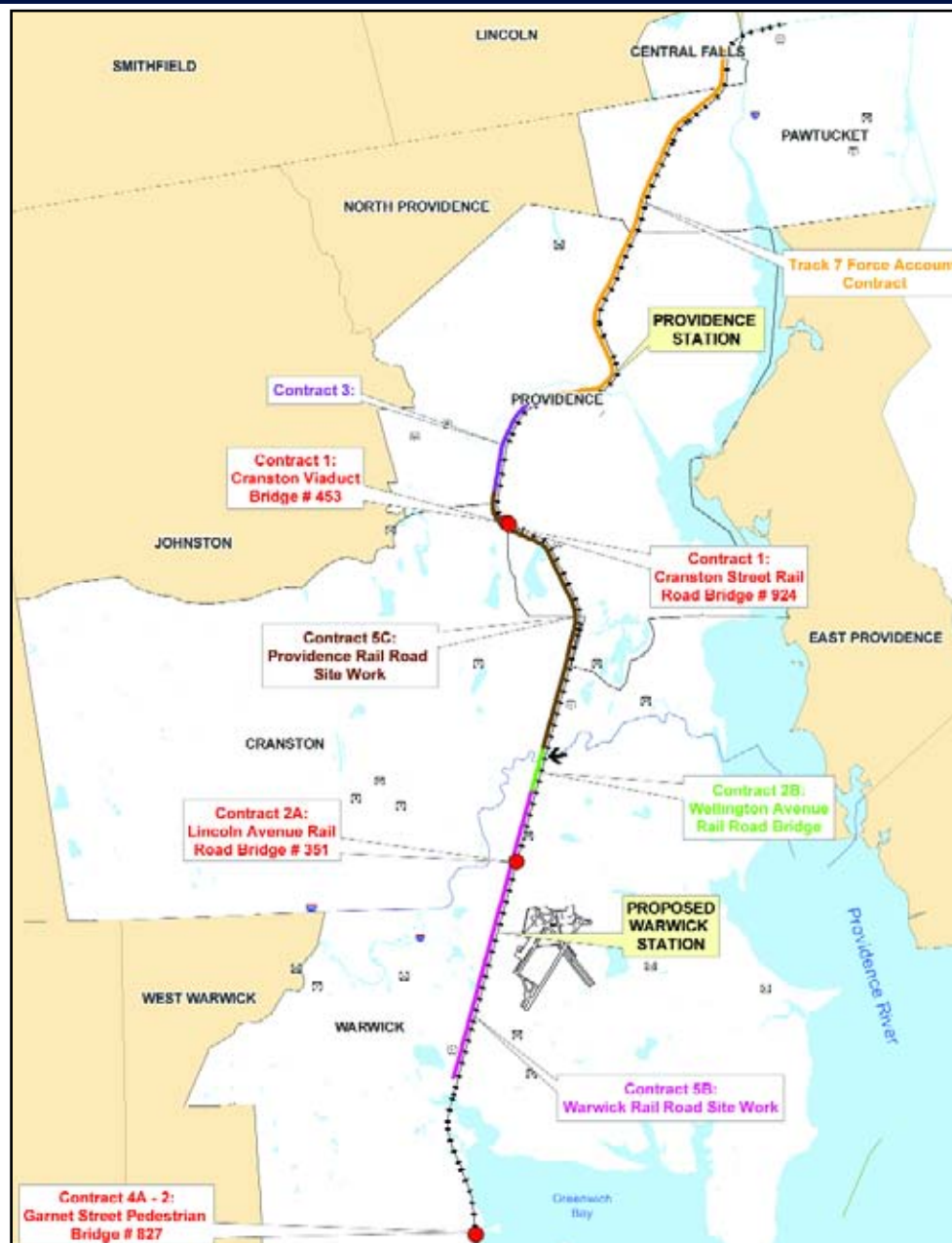


Legend

PROJECT NAME

- Track 7 Force Account Contract
- Contract 3
- Contract 5C: Providence Rail Road Site Work
- Contract 2B: Wellington Avenue Rail Road Bridge
- Contract 5B: Warwick Rail Road Site Work
- Contract 5A: North Kingstown Rail Road Site Work
- Contract 1: Cranston Viaduct Bridge #453
- Contract 1: Cranston Street Rail Road Bridge #924
- Contract 2A: Lincoln Avenue Rail Road Bridge #351
- Contract 4A-2: Garnet Street Pedestrian Bridge #833, bridge
- Contract 4A-1: Rocky Hollow Road Bridge #827, bridge jacking

These maps show the major contract sections of the FRIP. Above, the southern section from North Kingstown to Warwick. At right, the northern section from Warwick to Central Falls. The maps also identify the location of existing and proposed commuter rail stations.



Administration (FHWA) dollars, and Economic Development Corporation (EDC) bonds and RIDOT bonds (both of which were approved by voters). It included the construction of 12 miles of new track on new locations south of Providence,

five miles of upgraded track north of Providence, and five miles that will remain as shared track where clearances were improved.

The FRIP not only makes freight rail feasible, it aids RIDOT's efforts to expand commuter rail serv-

ice in Rhode Island. The added capacity provided by the third rail also will provide the capacity needed to run commuter rail to T.F. Green State Airport in Warwick and into South County, a rapidly growing part of Rhode Island, in 2009.

Commuter Rail

Plans in place to open two rail stations in 2009

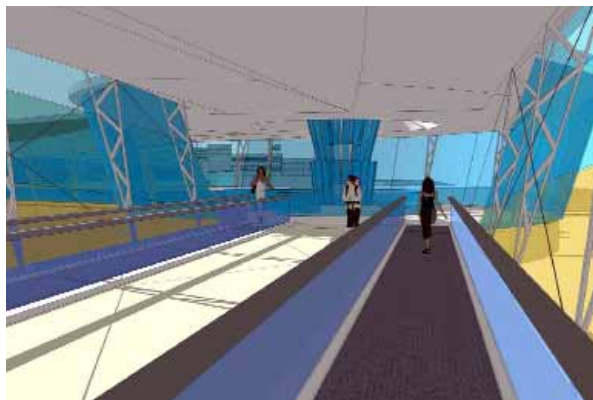
After years of hard work, RIDOT is well on its way toward making the expansion of commuter rail service in Rhode Island a reality with a number of significant milestones being reached in 2006.

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A groundbreaking took place on July 17, 2006 for the Warwick Intermodal Station (WIS), a structure that will be built over the next three years to provide a direct rail connection from T.F. Green State Airport in Warwick. The \$222.5 million project includes the station, a consolidated rental car facility, a bus hub for local and intercity buses, a parking garage to accommodate both the rental car fleets (2,200 spaces) and commuter rail passengers (1,000 spaces).

A unique aspect of the project is a 1,250-foot, elevated, enclosed skywalk with moving sidewalks that will connect to the airport and to the train station. This was one of the most oft-debated aspects of the project over the past 10 years of planning for the WIS, and is vital given the distance from the airport to the train station.

Still, the WIS will be one of the closest train stations to a major airport in the country. At present,



A rendering of the inside of the 1,250-foot skywalk that will be built to connect the airport to the train station.



An aerial view of the Warwick Station Redevelopment District with the train station and garage in the foreground and T.F. Green State Airport's main terminal in the background.

RIDOT has an agreement with the Massachusetts Bay Transportation Authority (MBTA) to provide the passenger service. RIDOT expects construction to wrap up in mid 2009 with rail service commencing at the same time.

The service will include daily stops in Providence with the trains continuing north toward Boston. Pricing has not been set, but a round-trip fare to Providence, including parking, is estimated to cost about \$10.

Along with providing rail service, the WIS provides a chance for significant economic develop-

ment for Warwick. The station sits in the 70-acre Warwick Station Redevelopment District, which the city envisions being developed with hotels, restaurants and retail uses.

Another significant milestone for commuter rail in Rhode Island came only two weeks after the WIS groundbreaking. Just off I-95 in Pawtucket, Rhode Island and Massachusetts officials gathered to mark the opening of the Pawtucket Layover Facility. The facility boasts a six-track commuter rail yard for the purpose of overnight storage of commuter rail equipment. The trains will then be staged to begin

Rhode Island-based service first thing each morning.

Prior to opening the new facility, trains were stored at an overcrowded facility in Attleboro, close to a residential area. This new facility lies between an industrial park and I-95; an ideal spot for a rail yard.

Announced at the ribbon cutting for the Pawtucket Layover Facility was an immediate expansion of commuter rail service into Providence, which the MBTA has operated since 1988. The number of weekday roundtrips between South Station and Providence increased from 11 to



Photo: Chuck Aube

RIDOT Deputy Director William "Chuck" Alves stands next to a commuter rail train during the dedication of the Pawtucket Layover Facility.

15. In addition, for the first time, weekend service is available with nine roundtrips on Saturdays and seven roundtrips on Sundays.

RIDOT also is continuing to work to develop a train station at Wickford Junction, close the site of a historic train station and now a retail development in North Kingstown off Route 4. The station would include a 1,000-car parking garage.

Wickford Junction will service the South County



Above, a view of the Pawtucket Layover Facility with a set of the Massachusetts Bay Transportation Authority's newer commuter rail trains. Below, a drawing of how the Wickford Junction garage and train station in North Kingstown might look like when built.



WICKFORD JUNCTION RAIL GARAGE

area, the state's fastest growing region. RIDOT anticipates that both stations will contribute to a reduction of traffic on the busy I-95 corridor to Providence.

In the future, commuter rail service could expand with more stops and possibly extend further south in Rhode Island. RIDOT is seeking consultant services to help it conduct feasibility studies of addi-

tional stations in East Greenwich and Cranston and of bringing service to existing Amtrak stations in South Kingstown and Westerly. For the latter station, there is a possibility of someday linking up to Shoreline East, a commuter rail service in eastern Connecticut from New London to New Haven. From New Haven, the Metro North line provides commuter rail service to New York City.

Demolition of the old Jamestown Bridge

Multiple detonations used to finally demolish aging structure spanning Narragansett Bay

This year Rhode Islanders had a long-awaited wish come true as the aging Jamestown Bridge was demolished. The bridge spanning the West Passage of Narragansett Bay has been out of service for 14 years, but its removal had been repeatedly postponed due to financial considerations.

The demolition phase wrapped up in November 2006. The 66-year-old structure was removed using mechanical disassembly and a series of 13 explosive demolition events. These included 11 underwater blasts of concrete pier stubs from August through November and two large-scale detonations of major superstructure segments in April and May.

Each detonation event has required a temporary closure of the adjacent Jamestown-Verrazzano Bridge, but RIDOT has been able to hasten the closure at each step of the process in comparison to what was originally planned. Working with the prime contractor for the \$19.5 million project, Cashman Equipment Corp., RIDOT was able to reopen the Jamestown-Verrazzano Bridge in less than two hours for the major detonations and in under 15 minutes for the underwater demolition events. RIDOT had expected four-hour closures during major demolition and 30-minute closures for underwater blasts.

The two-lane Jamestown Bridge, a Warren cantilever continuous truss bridge, opened in 1940 and

carried traffic over the Bay for 52 years. It was replaced by the four-lane Jamestown-Verrazzano Bridge, which opened to traffic in 1992. In 2004, acting on a directive from Governor Donald Carcieri, RIDOT made the bridge's removal a high

priority.

Advance work on the demolition began in late 2005 and as soon as winter weather conditions eased, Cashman began removing concrete deck sections in preparation for the first major explosive demolition.

The first demolition on April 18 used explosives called linear shape charges that removed the center span (comprising 1,100 feet of through truss superstructure). The event attracted a great deal of attention from the media and the general public, and throngs of people gathered on both sides of the Bay to watch it.

The second demolition on May 18 included 2,200 feet of bridge superstructure. This included 1,100 feet of girder span and

deck truss superstructure on either side of the gap left by the demolition of the center span. Added to the demolition was the detonation of the top 50 feet of the bridge's two tallest piers, which held up the center span. A few moments after the linear shape charges ignited on the span sections, 1,126 pounds of conventional blasting explosives (563 pounds for each pier) detonated and blew apart the top of the piers.

By combining the pier detonation with the deck detonation, RIDOT was able to avoid another long-term closure of the bridge.

RIDOT, working with the Rhode Island State



Above, the main span of the old Jamestown Bridge erupts into flame and smoke as explosive charges ignite in the first major blast of the demolition project on April 18, 2006. Below, the top 50 feet of a pier explodes at the second demolition on May 18, 2006.



Photo: Chuck Aube

Police, was able to implement a “rolling block” instead of a full closure for the underwater detonations. This worked by staging State Police cruisers on either side of the bridge. When notified, the police vehicles moved into the lanes of traffic and traveled very slowly to clear traffic from the bridge. Once the all-clear signal was given, the cruisers accelerated to normal highway speeds.

Recovery of debris was planned to continue into early 2007. This was to be followed by removal of construction staging areas on both sides of the bridge and landscaping work to restore the area to its pre-existing condition.

The only portion of the old bridge remaining is about 1,600 feet of trestle spans. The site has long been envisioned as the location for a public fishing pier, and the Rhode Island Department of Water and Environmental Management is currently examining a statewide shoreline fishing report to consider this and other locations. Due to advanced deterioration, RIDOT favors demolishing this section rather than rehabilitating it. That work would be done under a separate demolition contract.

Aside from the marine safety and aesthetic benefits gained from demolishing the outdated bridge, the project is yielding a number of environmental benefits through recycling of salvaged materials. All above-water steel, about 6,000 tons of steel, were salvaged for recycling. Otherwise, this material would have been disposed in landfills.

An even larger recycling component is the reuse of 43,000 tons of concrete debris. A portion of the

concrete will be placed in the vicinity of the pier stubs to replace some of the habitat that was lost as a result of the pier demolition. The remainder is being used to construct three offshore artificial reef sites, two located south of Aquidneck Island and another in Rhode Island Sound.

The reefs have already attracted the attention of anglers, as noted in a recent Providence Journal column on saltwater fishing.



Photos: Chuck Aube

Water and concrete debris fly skyward during underwater demolition of pier segments on August 31, 2006. Below, explosives ignite on a section of deck truss superstructure at the May 18 detonation.



Bicycle and Pedestrian Improvements

Rhode Island's already extensive network of bike paths continues to grow

RIDOT is advancing several plans for extending bike paths across Rhode Island and exploring locations for new ones – good news for pedestrians and cyclists alike who already have an impressive array of paths available to them.

Rhode Island has close to 50 miles of bike paths open. New path segments are under construction and others are poised to begin construction in the next couple of years.

Bike paths are not new to Rhode Island, and individual communities have been building local bike paths for more than 30 years. In the late 1980s and early 1990s, however, RIDOT began work on the first multi-town bike



Photo: Charles St. Martin
A view of the scenic Ten Mile River Greenway.



Photo: Chuck Aube

Construction is nearing completion on the Berkeley-Martin Street project, which will have the Blackstone River Bikeway pass under a busy road instead of meeting it at-grade.

path, starting in Providence and running south to Bristol. The 14-mile long East Bay Bike Path proved to be popular, and it prompted great interest and support among the general public to see more bike paths built.

Fifteen years later, two paths are vying to take the title of the state's longest bike path away from the East Bay Bike Path. The Blackstone River Bikeway is about seven miles long now, and two active projects will add two miles to the northern end and one mile to the southern end. By late 2007, the path will stretch 10 miles from Cumberland to Woonsocket. Total distance when completed is 19 miles.

Even longer will be the Washington Secondary Bike Path from the Cranston/Providence border all the way to the Connecticut border. This 25-mile path is composed of five other paths, known as the Cranston Bike Path, Warwick Bike Path, West Warwick Greenway, Coventry Greenway and Trestle Trail.

About 10 miles of the path is open from Cranston Street (off Route 10) to the Coventry line. Another 3-mile section in Coventry is open and

Distance of Rhode Island's major bike paths

Bike path name & location	Total mileage
Blackstone River Bikeway: Former Lonsdale Drive-In on Rte. 123 in Cumberland to New River Road, off Manville Hill Road, Lincoln.	6.9
East Bay Bike Path: Veterans Memorial Parkway in East Providence to Independence Park in Bristol.	14
William C. O'Neill (South County) Bike Path : Kingston Station (Amtrak), Rte. 138, South Kingstown, to Rte. 108 in Narragansett.	5.6
Ten Mile River Greenway: Ferris Avenue in East Providence to Slater Park at Armistice Boulevard in Pawtucket.	2
Woonasquatucket River Bikeway: Providence Place Mall (Promenade Street) to Lyman Avenue in Johnston.	4.5
Cranston Bike Path*: Cranston Parkade on Garfield Street to West Natick Road (off Rte. 2 near Warwick Mall).	5.5
Warwick Bike Path*: West Natick Road to Providence Street.	1.6
West Warwick Greenway*: Providence Street to Coventry border (Whitford Street).	2.8
Coventry Greenway*: Whitford Street to Hill Farm Road.	4.3
<i>* These are considered part of the Washington Secondary Bike Path.</i>	
Total:	47.2

construction may start in 2007 to link the two segments. The western section, the Trestle Trail, will be built in two sections, the first starting in 2008.

Two medium-distance bike paths taking shape include the Woonasquatucket River Greenway and the South County Bike Path. The former is a 4.5-mile series of paths and on-road routes leading from the Providence Place Mall on Promenade Street to Lyman Avenue in Johnston. Eventually this path will reach the Smithfield border.

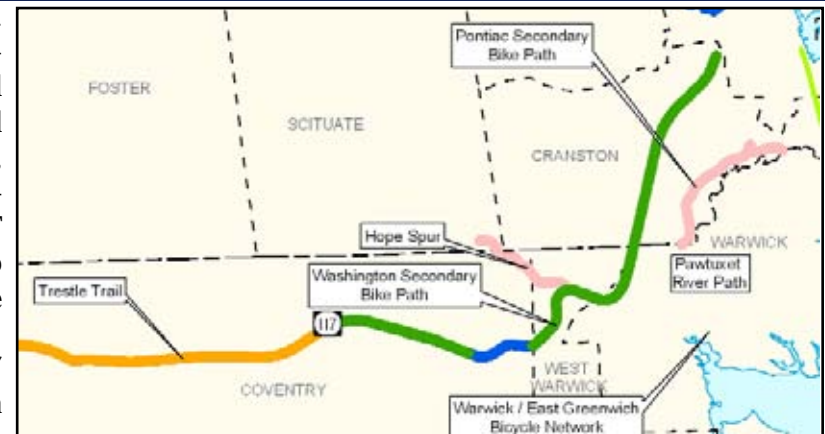
Slightly longer is the South County Bike Path, also called the William C. O'Neill Bike Path. This path runs 5.6 miles from Kingston Station on Rte. 138 to Rte. 108 on the South Kingstown/

Narragansett border. Another one mile section is being built and on-road routes lead to Narragansett Town Beach.

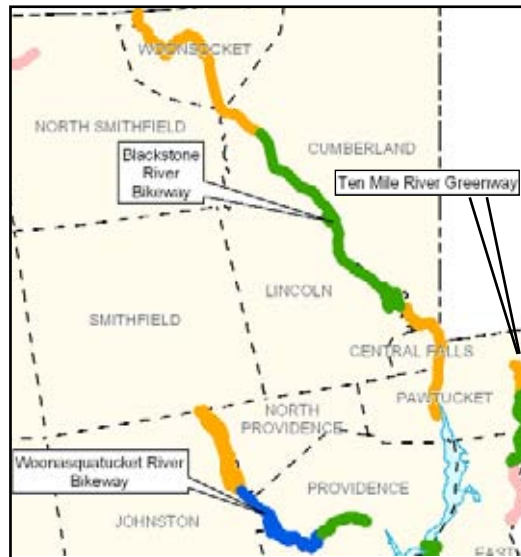
Rounding out the list of major bike paths is the Ten Mile River Greenway. While only two miles long, the path from Armistice Boulevard in Pawtucket to Ferris Avenue in

East Providence is one of the most scenic. Unlike other bike paths built on abandoned rail corridors, this path was not and designers were able to follow the natural topography of the land to create a curvy, hilly path. Plans are in the works for a one-mile extension to the north and RIDOT hopes to use an underutilized rail line to extend the path to the East Providence waterfront.

RIDOT's Website, www.dot.state.ri.us/bikeri, provides detailed information on existing and proposed bike paths, maps, links to download the statewide bicycle map and more.



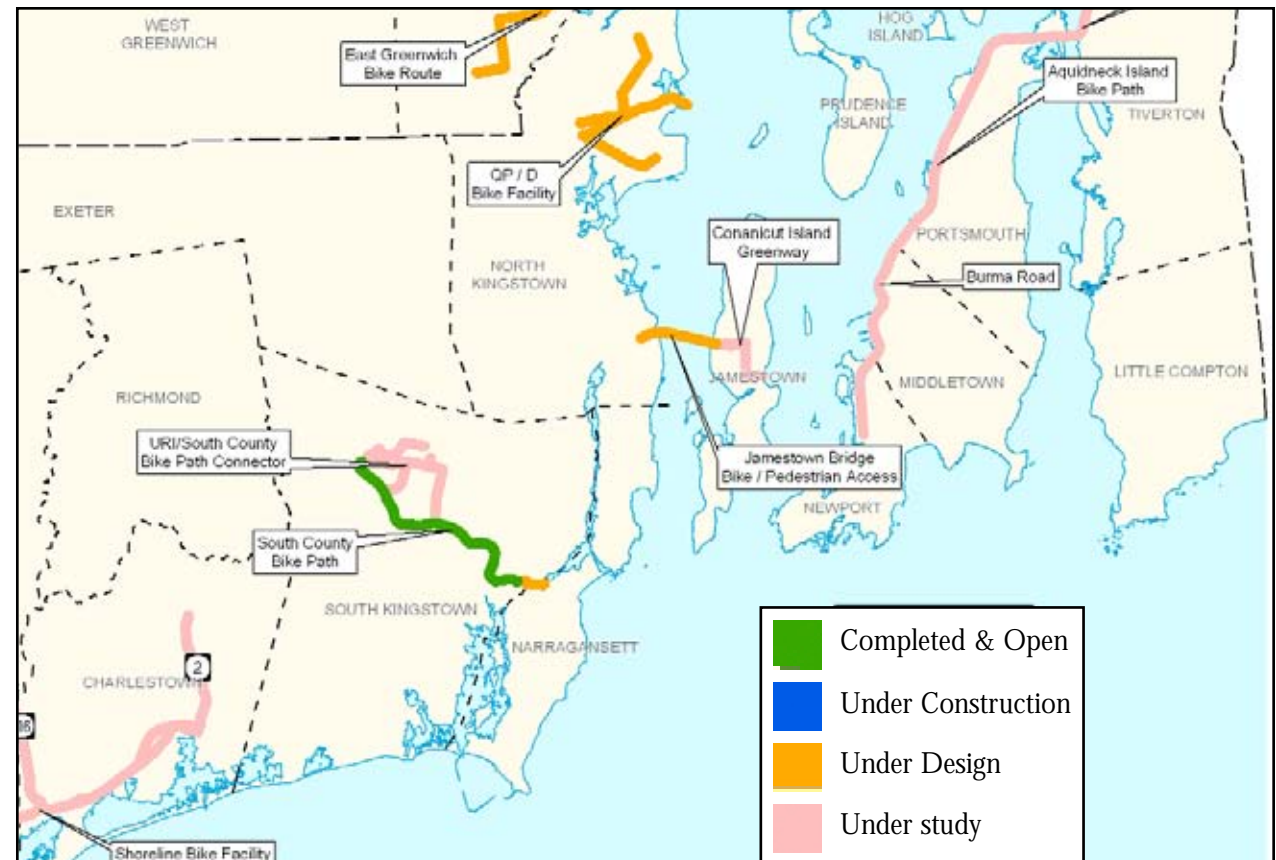
The Washington Secondary Bike Path is becoming one of the longest in the state. It stands at 15 miles now, and will grow to 25 miles once the Trestle Trail in western Coventry is completed.



Above, the Blackstone River, Ten Mile River and Woonasquatucket River greenways connect many neighborhoods and villages in northern Rhode Island.



The East Bay Bike Path is the longest and oldest bike path in the state. A spur in Warren is being considered.



Above, many projects are being studied and the South County Bike Path is poised to grow a bit with a one-mile extension. RIDOT is also exploring connections to the University of Rhode Island.

Administrative Services

The support system for all that RIDOT does

The Administrative Services Division at RIDOT serves as a support system for most activities undertaken by the Department, from contract administration to providing education and training to support transportation-related construction industries.

Administrative Services' primary responsibilities involve the development and implementation of a comprehensive administrative support services program; ensuring the effective and efficient achievement of departmental policies, goals and objectives; ensuring that resources are utilized in conformance with State and Federal laws, rules and regulations and overseeing major departments under it, including Contract Administration, the Office of Business and Community Resources and the Office on Highway Safety.

Overall, Administrative Services has the responsibility for all RIDOT administrative, programming, coordination and liaison duties for external advancement and educational programs including the University of Rhode Island's Transportation Center. In keeping with those responsibilities, Administrative Services has participated in the award of more than \$1 billion in contracts since 2001.

Among its major ventures, Administrative Services is the liaison between RIDOT and the University of Rhode

Island in regard to URI's Center for Transportation Studies and its Transportation Center. RIDOT was instrumental in assisting to secure a \$12 million grant from the U.S. Department of Transportation, which requires a one-to-one match to assist URI in developing, implementing and administering the program. The Administrative Services Division

Assistant Director is responsible for all program coordination with the Transportation Center.

The Transportation Center was established in 1999 to conduct multidisciplinary education, research, technology transfer and outreach for surface transportation systems and advanced transportation infrastructure. The mission and goals of the center is to advance U.S. technology and expertise in the many disciplines comprising transportation through the mechanisms of education, research and technology transfer. The Center, in partnership with RIDOT, has implemented an aggressive program at Feinstein High School. This program is groundbreaking in the development of a school curriculum that recognizes math and engineering in every area of study. Teachers have worked with the Center and RIDOT to learn the many opportunities of transportation related careers.

RIDOT has also secured the commitment of the Rhode Island Consulting Engineers (RICE) who has provided, through their membership, assistance to classroom teachers and internship opportunities within their firms. This year they are committed to adding scholarship opportunities to their contribu-

tions. Students have been exposed to the college campus and classroom, and also been afforded internship opportunities. This school year will see

the advancement of this program. For more information, visit www.uritc.uri.edu.

One of the most visible components of this partnership with URI is the annual Construction Career Day, now in its sixth year. On May 17 and 18, 2006, RIDOT, the Federal Highway Administration (FHWA), the Center and members of the private



Pictured here at the National Transportation Week Breakfast at the Sheraton Hotel in Warwick are, from left, Dr. Richard Horn, former Executive Director of the URI Transportation Center, FHWA Division Administrator Lucy Garliauskas, RIDOT Assistant Director Phillip Kydd, NHTSA New England Regional Administrator Philip Weiser, and FHWA Administrator Richard Capka.

construction industry, partnered to host the event at the Mid-State Facility in Coventry. The event addresses two different areas of concern, the large number of at-risk high school students who have no college plans or career plans as they finish their high school education and the growing deficit of well-trained employees entering the construction field. Construction Career Day offers these students the opportunity to explore the many different career opportunities within transportation construction.

About 1,600 students attended the event and were given the opportunity to speak to members of the construction industry and experience hands-on exposure to construction equipment. For more information, visit www.uritc.uri.edu/ccd.

Administrative Services has participated in the award of more than \$1 billion in contracts

The success of Construction Career Day in Rhode Island served as the impetus for the Administrative Services to lead a charge for the establishment of a National Construction Career Day Center (NCCDC). The NCCDC has been established under the auspices of Administrative Services at the URITC and is beginning its second year of operation. For more information, visit www.uritc.org/nccdc.

Other programs URI and RIDOT are working on collaboratively include a partnership between the Transportation Center and the University of Puerto Rico at Mayaguez to begin offering students exchange experiences. Students are given the opportunity to work at the Center, and at RIDOT within its summer intern program. This year marked the third year of the program and the first visit of URI students to the campus at Mayaguez. In the coming year, Administrative Services intends to expand the program to include an exchange of faculty and DOT engineers.

Another outreach program is called the Local Technology Assistance Program (LTAP). RIDOT continues to support this important program which is aimed at Rhode Island public works employees and other transportation practitioners. LTAP training provides useful assistance in workforce development, best practices, and safety. The LTAP is located at the Transportation Center where services are managed and planned. In the past year, a dozen individuals have been trained and certified as flaggers through the LTAP program. Trainings are provided throughout the year for cities and towns as well.

The Administrative Services Division will oversee the continuation of the RIDOT/URI Collaborative Agreements. These agreements, beginning in December 2000, have established three transportation engineering faculty positions at the URI College of Engineering. Additionally, a senior transportation management faculty position, along with a faculty position in transportation and urban planning, has been established at the URI College of Business this year. This will further enhance a closer professional relationship with URI and assist in the professional linkage by expansion of the academic curriculum in concentrated areas of applied transportation research and the joint involvement in the RIDOT TRAC program.



Photos: Charles St. Martin
Above, a high school student tries his hand at a back hoe at Construction Career Days in May, 2006.
Below, a student practices welding by drawing his initials in a piece of steel.



Contract Administration

All contracts with RIDOT flow through this office

This section is responsible for all Contract Procurement at RIDOT, Computerized Highway Affirmative Action Management Program (CHAMP) and Quest/Electronic Bidding.

Within Contract Administration, the Office of Contracts & Specifications serves to establish formal business arrangements between RIDOT and suppliers of all major goods and services the Department purchases from the private sector. Procurement responsibilities fall into two contract categories, Construction

projects that are selected through electronically-based bidding procedures and Professional Services contracts that are both engineering-oriented (such as Bridge, Highway

and Traffic design related) and non-engineering related (such as media campaigns, computer services, highway safety initiatives, etc.). With Construction projects, the apparent low-bidder then undergoes a post-qualification process subject to both Departmental review and Federal acceptance, if required. Professional Services contracts are subject to qualification-based selection procedures in accordance with State and Federal laws and regulations. Final selection recommendations are then presented for both Departmental acceptance and State and Federal approvals before costs are negotiated and finalized for contract award.

Office of Contracts & Specifications oversees each step of the process, including coordination of on-line public notification of all transportation-related projects through the use of the Rhode Island Vendor Information Program (RIVIP), direct participation in a competitive selection process, estab-

lishment and execution of contractual documents, daily interaction with contractors, consultants and the general public as well as project coordination with the Department of Administration's Office of Purchases, the Federal Highway Administration (FHWA) and other Federal or State agencies.

Occasionally, RIDOT needs to acquire specialized goods and services. These services can range from such disparate purposes including hiring professional management consultants and hiring specialized contractors to provide a broad range of services.

In fiscal year 2006, Contract Administration participated in the award of 84 construction projects worth \$312 million, including a number of

GARVEE projects. It also took many steps to streamline the process, including development and testing of a new web-based software for the development of engineer's estimates and to serve as the foundation for electronic bidding. Contract Administration successfully converted the advertising process for construction bids into an all-electronic format, making project documents available on disk at no charge to the public.

Contract Administration also led a team of RIDOT, FHWA and RIDOA Professionals in the review of State and Federal Procurement Practices and to recommend improvements. It also continued research efforts within RIDOT, FHWA, other states' DOTs and other states' online procurement systems to direct RIDOT toward the most efficient, effective participation in the Purchases' web-based Vendor Information Program, the RIVIP.

Among other activities in fiscal year 2006,

Contract Administration led the review and negotiations with the Rhode Island Consulting Engineers (RICE) group on the standard contract used on all design projects; continued expansion and advancement of web-supported procurement; execution of Master Price Agreement type procurements utilized for both bridge and steel inspection purposes; the continued expanded use of electronic data transfer to maximize paper reduction; and the integration of the new Construction Management System (CMS) into the existing Project Management Portal (PMP) and Financial Management System.

In the 2007 fiscal year, Contract Administration's goals include: Continued research, planning and implementation of electronic data transfer, disk- and web-based processes to most efficiently meet RIDOT procurement needs; planning and implementation of the new web-based software for Electronic Bidding, named Quest Web; and development and implementation of a Web-based software to streamline and integrate many reporting and compliance obligations.

In regard to CHAMP, the Office of Business and Community Resources and the Office of Contracts and Specifications uses the information from CHAMP to determine a contractor's compliance with 49 CFR Part 26 (a Federal law related to disadvantaged business enterprises). CHAMP has the capability to track Disadvantaged Business Enterprise participation, On the Job Training activity, workforce utilization and prevailing wage rates on RIDOT Federal Aid Projects. Contractors' information is submitted to RIDOT electronically, eliminating paper work. There are currently 110 contractors with Champ, 66 who have Champ CM (Prime Contractor Module) and 44 who have Champ SM (Subcontractor Module).

Office of Business and Community Resources

Outreach for business, outreach for education

The Office of Business and Community Resources is all about making connections for business by providing them training while at the same time supporting the overall construction industry.

This section is responsible for the Disadvantaged Business Enterprise Program, Emerging Business Program and the On the Job Training Program. Many accomplishments were realized in 2006.

Business and Community Resources again successfully partnered with the Federal Highway Administration (FHWA) and the University of Rhode Island's Transportation Center to conduct the annual Transportation Summer Institute. The Institute takes place during July each year and includes two, one-week sessions for middle school students. It offers them exposure to transportation careers, often reaching students who are under unfamiliar with engineering and transportation issues.

Also working cooperatively with the Transportation Center, RIDOT operates the RIDOT Transportation Research Activity Center (TRAC) program. This is a national transportation and civil engineering outreach program, developed to stimulate the interests of middle and high school students, particularly minorities and women. The program has the participation of RIDOT transportation professionals, as well as the Rhode Island Consulting Engineers (RICE) and the Rhode Island Society of Professional Engineers (RISPE). Ten high school seniors from the Feinstein School were placed in internships this spring with RISPE firms.

In Summer 2006, RIDOT entered into an agreement with the Talent Development Program at

URI to assist with recruitment and delivery of the TRAC Program. Talent Development has had a presence in middle and high schools in urban areas.

Business and Community Resources does a great deal of outreach to those already in the job force, while also paying attention to minority-owned and small businesses. The Office monitors contractor compliance with disadvantaged business enterprise

underutilized DBEs to participate on RIDOT projects. This includes new areas of expertise within the DBE community such as fleet washing, hazardous waste, utility, specialized landscape items and catch basins.

DBE regulations recommend that DOT's utilize minority/women owned banks to assist in the development of DBE firms. While there are no minority/women owned banks in Rhode Island, the RIDOT has signed an agreement with the Minority Investment Development Corporation to administer the Emerging Business Program. This financing program has completed lines of credit for underutilized DBE contractors, provided financial counseling, credit repair, and financed equipment purchases.

This is accomplished by a comprehensive commercial loan vehicle placed within the underutilized DBE community through the MIDC. To date it has expended the first million dollars and looks to expend the second million dollars this fiscal year.

Lastly, Business and Community Resources in the past year hosted a DBE Networking session for prime contractors and underutilized DBEs that allowed face-to-face interaction in a social setting. The event was set-up like "speed dating," with firms scheduled to meet a particular firm for approximately eight minutes before moving on to the next prescheduled meeting. This continued until all firms had "dated" each other. All of RIDOT's prime contractors participated. A post event survey found that all in attendance felt it was a good idea and that this should be done yearly. Subcontracts were obtained as a result of this event.



Above, a RIDOT engineer discusses bridge designs at the annual Transportation Summer Institute at the URI Transportation Center.

[DBE] and On-the-Job Training regulations and goals. Currently approximately 31 individuals are participating in the On-the-Job program.

Within the next three years, RIDOT plans to emerge Rhode Island-based DBE firms into areas of work not currently performed by DBEs, based on the under-utilization of the protected classes defined in 49 CFR Part 26 (a Federal law related to disadvantaged business enterprises). This is part of the Emerging Business Program.

Business and Community Resources has expanded its approach to developing opportunities for

Office on Highway Safety

Working to keep people safe on the roads

28

The mission of the Office on Highway Safety is to reduce the number of fatalities and serious injuries on Rhode Island's roadways and to reduce the number of traffic crashes and the severity of their consequences. These efforts are supported by federal funding from the National Highway Traffic Safety Administration (NHTSA).

Highway Safety and the Administrative Services Division as a whole supported changes in State legislation aimed at making roadways safer. Chief among them was a change that increased penalties for driving under the influence. Previously, a chemical test or breathalyzer refusal was only a civil offense while a first-offense driving under the influence (DUI) conviction was a misdemeanor. Under this new law, refusing to take a breath test for a first time remains a civil infraction, but the license suspension is doubled from six to 12 months. Refusing a second time or more within a five year period becomes a criminal misdemeanor offense and the fines, prison time and community service penalties are substantially increased.

Other legislation in the area of alcohol use included "social host" legislation which closed the loophole that made it virtually impossible for law enforcement to charge adults who provided alcohol to minors for consumption unless the actual purchase was documented. The new law expands the definition of procuring alcohol for minors to include permitting the consumption of alcohol by underage individuals in one's residence and any adult who knowingly allows minors to consume alcohol in his or her home will now be held criminally responsible.

Highway Safety continues to advocate for changes in State legislation to create a primary seatbelt law. Currently Rhode Island has a secondary



Photos: Chuck Aube

Above, police officers stand on the base lines at McCoy Stadium in Pawtucket for an event to raise awareness of drunk driving laws. Below, the team's mascot Paws watches the festivities.

law which only allows police officers to cite offenders if they have been pulled over for other reasons. The exception to this is a primary law that requires seatbelts or appropriate child restraints for all children under 18. Highway Safety was, however, pleased to see legislation passed in 2006 that banned the use of cell phones – even with a hands-free



device – for drivers under 18.

Major accomplishments in the past year included the hosting of two events aimed at curbing DUI. In April, Highway Safety and the Rhode Island Judiciary co-sponsored a judicial summit entitled “Putting the Brakes on DUI.” The full day event featured national speakers providing innovative programs and trends dealing with the judicial, prosecutorial and educational aspects of the issues surrounding DUI. The 400 attendees included representatives from all State, local, profit and non-profit organizations involved in efforts to reduce drunk driving on Rhode Island’s roadways.

In August, Rhode Island hosted a kickoff event as part of the “You Drink and Drive, You Lose” national campaign against drunk driving. The event featured a press conference on the infield at McCoy Stadium in Pawtucket, home of the Pawsox, the AAA affiliate of the Boston Red Sox. Jeremy Kapstein, the Boston Red Sox Senior Baseball Advisor, Pawtucket Red Sox officials, State and local police and RIDOT officials attended in the hopes of raising the visibility of the enforcement campaign. Highway Safety also funds year-round sustained DUI and speed enforcement patrols.

In other efforts to reduce alcohol-related fatalities on Rhode Island’s roadways, Highway Safety sponsored the MADD (Mothers Against Drunk Driving) Team Spirit program for 185 high school students and 25 adults at Bryant University. Activities included highway safety presentations, role playing, team building and hands-on exercises. In another project, Highway Safety, the Rhode Island Municipal Police Training Academy and the Rhode Island Police Chiefs Association hosted a Standard Field Sobriety Test (SFST) instructor recertification program and SFST refresher course in May at the Community College of Rhode Island. Rhode Island is one of the first states in the nation to offer this refresher training to members of its State and local law enforcement agencies.

As for promoting greater seatbelt usage, Highway Safety joined the Interscholastic League, AAA, the Rhode Island State Police and WBRU to sponsor the “Buckle Up Teens” contest. High school students from around the state were challenged to develop a 30-second radio and/or television commercial promoting safety belt use among teens. The winning commercials from Rogers High School in Newport and Burrillville High School were used to kick off Rhode Island’s “Click It or Ticket” campaign in concert with the national mobilization of that program in May, 2006.

Highway Safety also has been invited to join a partnership with the Rhode Island Civil Rights Roundtable and the Rhode Island Police Chiefs Association to discuss community outreach, training, and racial profiling issues. The purpose of this coalition is to develop trust and collaboration among the agencies who work on civil rights issues in Rhode Island, to form and maintain a communications network among participating agencies and to formulate a consensus agenda of common public policy or legal issues to work on together.

Additionally in the area of law enforcement outreach, Highway Safety hosted an awards program in June to recognize police departments for outstanding law enforcement related to safety belt, speed and impaired driving enforcement programs. Also in June, the New England Police Chiefs



Photos: Chuck Aube

Above, one of the student teams who placed third in the Buckle Up Teens contest, in which teenagers designed radio and television commercials to promote seat belt usage.

Association, in cooperation with Roger Williams University’s Criminal Justice Institute, chose Rhode Island as the site for the regional Executive Leadership program for law enforcement management officials.

This past year, the Traffic Records Coordinating Committee was revitalized to develop a Traffic Records plan to improve the accessibility, accountability, timeliness, accuracy and reliability of traffic data from all State agencies with traffic data requirements. The plan was submitted to NHTSA and received funding under the SAFETEA-LU legislation to begin implementing programs submitted from State and local agencies.

In the coming year, Highway Safety has aggressive programs to address other NHTSA priorities related to alcohol, occupant protection, racial profiling and motorcycle safety.

Construction Management

Dozens of projects, big and small, under its watch

30

The Construction Management section oversees all active projects from the bidding process through final completion. Most contracts are for the construction and rehabilitation of highways and bridges, however the projects are quite diverse ranging from the simple, pavement crack sealing, to complex, the relocation of a major Interstate with the Iway project.

In fact, Construction Management has been involved in every high profile project RIDOT has undertaken in the past year, including the demolition of the old Jamestown Bridge, the water transport of the Iway's new Providence River Bridge, construction of the relocated Route 403 and the Freight Rail Improvement Project. Also on the section's plate are smaller-scale projects such as construction and restoration of numerous buildings such as salt storage sheds, transfer stations, inter-modal transportation facilities, as well as the restoration of old train stations. Additionally, bike paths and linear parks fall under the section's purview.



Photo: Chuck Aube

Workers begin construction of a cofferdam for a new pier for the new Route 114 Bridge in Warren.

Among the many projects Construction Management is working on are two separate contracts to make safety improvements in the Route 1/Route 4 corridor in South County. Work on both projects is in full swing and should wrap up in 2007.

One of the projects involves the closure of narrow median crossover points along Routes 1 and 4 in North Kingstown. With significant increases in traffic volumes, these cross-

overs have been the site of many serious accidents in the past few years. At the same time the crossovers have been closed, RIDOT has installed protective cable-wire guardrails along the length of the highway to reduce the potential for head-on collisions caused by vehicles crossing over the narrow grassy median.

A bulk of the cost of this \$7 million project is for the construction of two ramps at the intersection of Routes 1 and 138. These ramps were planned, but never built, when an extension of Route 138 across South County was considered. The new ramps instead will be used to allow traffic to reverse direction on Route 1 instead of using the median crossovers.

Another project along Route 1 lies just over the South Kingstown line at the intersection with



The above rendering shows the plan for reconfiguring the intersection of Routes 5 and 113 in Warwick.

Bridgetown Road and Mooresfield Road (which carries Route 138 toward the University of Rhode Island). There the entire intersection is being widened to provide more capacity for URI and summertime beach traffic. Also at this project are median closures, cable guardrail installation and the construction of another signalized turnaround on Route 1. The project's cost is estimated at \$5 million.

Across Narragansett Bay, a significant reconstruction project is wrapping up on East Main Road in Middletown. New curbing and traffic signals were installed. The signals also will be timed to improve the flow of traffic through this busy commercial district.

Further north in Warwick, a major project the section is working on has started at the intersections of Routes 5 and 113 in the Greenwood section. The \$6.5 million project totally reconfigures the intersection, cutting down on the number of turning movements and making traffic flow more efficiently. Additionally, guardrail has been removed on Route 5 to provide better access to retail businesses on both sides of the street.

Much of the work the section does takes place



The above map shows the location of the new loops being built on Route 1 in North Kingstown to allow traffic to safely reverse direction on the busy highway. Below, one of the ramps under construction.



Photo: Chuck Aube

A major widening of the busy intersection of Routes 1 and 138 in South Kingstown was in full swing in 2006.

without much notice from the public, as RIDOT's goal is to limit lane closures and conduct work on high-traffic roads during nighttime hours when traffic volumes are the lowest. A perfect example of this is a \$12 million project to rehabilitate bridges that carry I-295 over Route 6 in Johnston. As part of the project, a highway bridge was widened to allow for a widening of Central Avenue. This work should wrap up in 2007.

In the East Bay area of Rhode Island, work has just started on the replacement of the Route 114 Bridge in Warren. A temporary structure is in place and RIDOT expects the new bridge to be done by the end of 2008.



Design - Bridge Engineering

Keeping watch over all of Rhode Island's bridges

If there's a bridge in Rhode Island, no matter how big or small, RIDOT's Bridge Engineering Department has a hand in it somehow.

Bridge Engineering has been more than busy in the past couple of years with RIDOT's highest profile projects, including the Iway, the Washington Bridge and the relocated Route 403. Aside from those, Bridge Engineering has plenty of other items on its plate, including the responsibility of inspecting all bridges in Rhode Island – more than 800 in all 39 cities and towns.

RIDOT contracts with a private firm to conduct the inspections, with every bridge subject to inspection once every two years. Older bridges or those showing significant signs of deterioration are inspected more frequently. Bridge Engineering also sets weight limits on bridges where needed. This information is maintained on RIDOT's web site at www.dot.state.ri.us/engineering/pages/bridges.asp.

In addition, Bridge Engineering is responsible for maintaining and updating its standard bridge details and specifications. Bridge Engineering continually

updates bridge improvement priorities and adjusts project schedules based on condition and need.

The Bridge staff reviews and oversees the work of engineering consultants as a project's construction plans and specifications advance from the conceptual design/study stage through final design. The Bridge staff coordinates the entire design process with engineering consultants, other RIDOT sections, utility companies, the Federal Highway Administration, historic agencies, municipalities, environmental organizations and numerous other parties. Once a project is in construction, Bridge staff continues to coordinate and resolve field issues that may arise, process shop drawings, and conduct reconnaissance efforts with resident engineers throughout the construction phase.

Bridge Engineering also has charge over the reviewing requests for overweight and oversize permits accepted by the Registry of Motor Vehicles. It receives, on average, two to three requests daily.

In the area of upcoming projects, a long-awaited

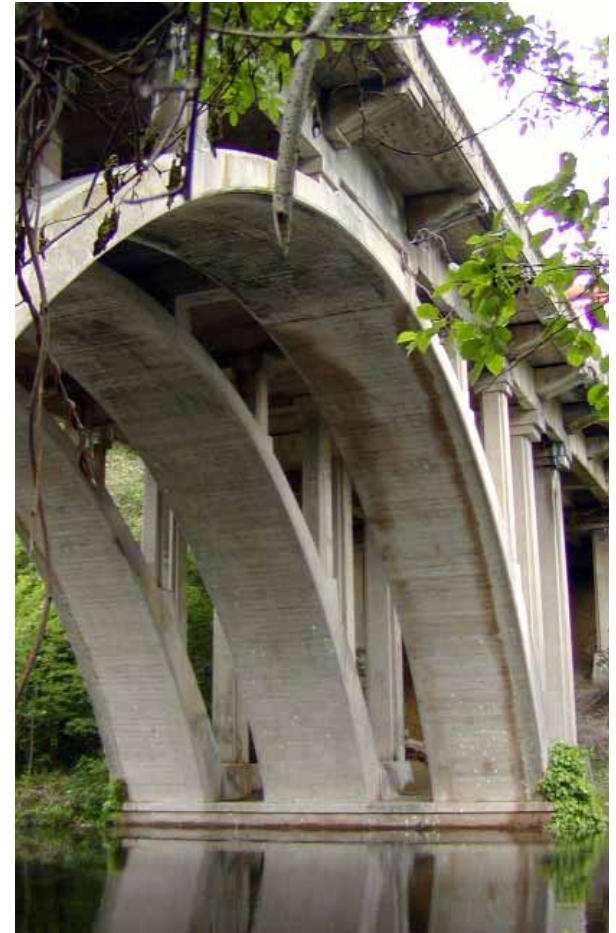


Photo: Peter C. Chiu, P.E. - Vanasse Hangen Brustlin
A major, multi-year reconstruction project of the Stillwater Viaduct Bridge in Smithfield is set to commence in 2008.

one is coming to fruition soon with the replacement of the Conant Street Bridge in Pawtucket. This old bridge over an active freight rail corridor has been closed for more 15 years and of late the City of Pawtucket approached RIDOT about having the bridge open again. RIDOT expects work to begin



The Jamestown-Verrazzano Bridge is due for repairs in 2007.

on the \$4 million, single-span truss bridge in 2007 and take two years to complete.

Bridge Engineering will be spearheading a number of bridge rehabilitation projects, the largest being on the Jamestown-Verrazzano Bridge. An ongoing inspection program is leading to a maintenance contract focusing on the bridge's main span to preserve the integrity of this 15-year-old bridge. RIDOT expects work on the one-year project to begin in 2007 and cost about \$3 million.

Other major bridge projects under construction in the coming year include:

- Replacement of the superstructure for bridges that carry Main Street and Great Road over Route 146 in North Smithfield. The project is expected to cost \$7.3 million and take three years to complete. Another set of bridges that carry Hawkins Street and Branch Avenue over Route 146 are set for major repairs in 2007. RIDOT expects the \$3.4-million project to conclude in 2008.

- Demolition of the Sakonnet Railroad Bridge in Tiverton. This is being done at the request of the U.S. Coast Guard and will also benefit the Sakonnet River Bridge replacement project.

- Replacement of the Granite Mill Bridge in Burrillville. This bridge carries Route 107 over the Clear River.

- Installation of interim shoring on the South Water Street Bridge. The bridge carries I-195 over Wickenden Street in Providence's East Side.

- Completing emergency repairs to the Peace Dale arch. The work will involve strengthening the existing bridge to eliminate a 10-ton load posting and to stabilize the parapet wall

- Making repairs to a deteriorated seawall along Conanicus Avenue in Jamestown.

Bridge Engineering also is eyeing a major project that entails the replacement of the superstructure for the Stillwater Viaduct Bridge, which carries Route 116 over the Woonasquatucket River in Smithfield. This project, likely starting in 2008, will include a complete rehabilitation of an historic arch.



Above, existing conditions on the Conant Street bridge in Pawtucket. Below, an artist's rendering of the new bridge.



Design - Highway Engineering

Orchestrating the design process for projects aimed at easing congestion

The Highway Engineering department of the Design Section has many projects under its belt, and serves as a shepherd that overlooks its projects through the various stages of design.

The engineers in this section are in touch with all phases of a project's development, including interaction with the public through workshops and public hearings. Most projects are designed by outside consultants, who essentially serve as an extension of the in-house engineering staff. Highway Engineering remains involved right up to the time for advertising for a construction contract, including writing bid specifications and reviewing bids.

The larger projects Highway Engineering is working on include the major reconstruction of intersections and some long-awaited improvements designed to greatly improve traffic circulation and alleviate congestion.

Most recently, Highway Engineering hosted a public meeting in September to explore options for creating better access to the downtown area of Newport, one of the Rhode Island's most popular tourist destinations. The City of Newport asked

RIDOT to consider redesigning the ramps system for the Pell (Newport) Bridge, which carries Route 138 onto Aquidneck Island from the west. The goal of the project is to reduce stacking from the Downtown Newport ramp which now extends into the low-speed lane on the bridge and to provide a more scenic and direct connection with the downtown area.

RIDOT is reviewing two similar proposals that call for the removal of the Downtown Newport exit and construction of a new ramp



Above, a photo of existing conditions at the intersection of Routes 6 and 10 on the Providence/Cranston line.



Photo: Chuck Aube

Above, Apponaug Four Corners in Warwick, which may be replaced with a roundabout as part of a larger project to ease congestion in the village.

at a yet-to-be-determined location.

Other options call for the removal of other highway structures that were part of a once-planned highway, thereby freeing up significant land for development.

Highway Design is also working on design elements for the Apponaug Circulator

project, a long-awaited improvement aimed at diverting through traffic around the historic center of Warwick and providing residents in the densely populated east end of the city a better east-west connection. The proposal, estimated to cost \$22 million, also would replace conventional intersections with modern roundabouts. Current estimates have this project beginning construction in 2008.

Further north, RIDOT recently completed work on an Environmental Impact Statement (EIS) for improvements to the busy Route 6/10 interchange in Providence. The proposed project is slated to help reduce congestion within the interchange, reduce interchange-related traffic congestion on

adjacent roadways, especially in Olneyville, and improve the north-to-west travel movement by adding a missing movement – the necessity for which was not anticipated when the original interchange was designed.

The project also will address the deterioration of the existing bridges, as nine of the eleven bridges at the interchange are approximately fifty years old and nearing the end of their useful lives.

There is no project cost or start time, and the project needs to be scheduled in a future Transportation Improvement Program for funding. A detailed Web site featuring photos and videos can be found at www.pineapplestudios.com/Rte6-10Site/index.html.

To the east, RIDOT is considering a new interchange at I-195 and Warren and Taunton Avenues in East Providence. Working with the City of East Providence, RIDOT is developing plans to improve access to and from the Interstate. The project also would add movements to and from the east which do not exist today.

Additionally, the project would address traffic flow problems along adjacent streets of East Providence, and hindered development of the East Providence waterfront along the Seekonk and Providence Rivers.

Other projects Highway Engineering is working on include improving sidewalks to meet American with Disabilities Act (ADA) requirements and safety improvements with the installation of median guard rails on I-295 and Route 146. Additionally, the Department works on salt storage projects, including planning a new location in Smithfield and building a new structure in the Belleville Facility in North Kingstown.

Highway Engineering also oversees major resurfacing projects in which the driving surface is beyond repair. These 1-R (resurfacing) Projects are less intense than a full roadway reconstruction, and generally include cold planing and new surface overlay. Additionally, correction of minor drainage



Above, a photo of existing conditions on the ramp system near the Pell Bridge in Newport.

At right, the rotary at J.T. Connell Highway would be replaced with a modern roundabout.

Below right, one option calls for the removal of ramp sections, directing traffic through the roundabout and freeing up significant land for development.



problems, installation of new signage and striping and sidewalk restoration (including making the sidewalks ADA compliant) take place with these types of projects.

Some upcoming 1-R Projects in 2007 include Smithfield Avenue in Lincoln (\$2.4 million), Atwells Avenue in Providence (\$1.1 million), Elmwood Avenue in Providence (\$5.5 million), West Main Road in Middletown (\$4.4 million), and Warwick Neck Avenue in Warwick (\$1.7 million).

Design - Traffic Engineering

Linking traffic signals and redesigning intersections to improve traffic flow and enhance safety

The Traffic Engineering Department of the Design Section has the task of doing all it can to keep traffic moving at intersections while making sure it happens as efficiently and safely as possible.

Many projects fall under Traffic Engineering, from installing new signals to reviewing existing intersections for changes and safety improvements. Traffic Engineering also is responsible for the design and implementation of all traffic control devices on all State-maintained roadways (including pavement markings, signs and signals, as well as overhead direction signs on freeways).

One of the biggest design changes to come along in some time, one that Traffic Engineering is taking the lead on, is the use of roundabouts to replace conventional intersections or rotaries.

A roundabout is much smaller than a rotary, and cars enter at more of a right angle to the circle as opposed to a wider angle. The result is slower speeds and the ability to provide crosswalks on approach roads. Traffic in a roundabout only moves at about 20 to 25 mph on average. The Insurance Institute for Highway Safety has found that using a roundabout instead of a traffic signal reduces accidents by 75 percent. The design eliminates dangerous side-impact crashes and reduces rear-end crashes.

Motorists are just getting to experience roundabouts, thanks to one installed in 2005 at the intersection of Smith Street and Woonasquatucket Avenue in North Providence and a higher traffic volume one installed in 2006 at the entrance to Lincoln Park on Route 246 in Lincoln. Another dozen or so roundabouts are being considered in urban, suburban and rural settings in Cranston, Exeter, Lincoln, Newport, North Providence, Portsmouth, Smithfield, South Kingstown,



Photo: Francisco Lovera

Traffic flows freely through a roundabout opened in October 2006 on Twin River Road in Lincoln and the entrance to the Lincoln Park gaming facility.

Tiverton and Warwick.

Major projects for 2007 include the reconstruction of the intersection at Howard Avenue and New London Avenue in Cranston. This area has seen dramatic increases in traffic volumes, and

many State offices are accessed through this intersection. A roundabout is part of the design, and work should begin in early 2007.

Traffic Engineering also is working with the Town of East Greenwich to make changes to ease

Roundabouts vs. Rotaries

	Modern Roundabouts	Traditional Rotaries
Size	150 to 230 feet - generally two lanes	600 feet or more
Average Speed	15 to 25 mph	30 to 35 mph
Angle at Entry	Sharper curve - forces traffic to slow	Smooth curve or no deflection
Traffic Control	Yield control	Stop control
Right of Way	Vehicles in the roundabout	Vehicles entering the circle

congestion on Division Street in the vicinity of Route 2. The area has been developed significantly over the past several years, and a major development of the former Rocky Hill Fairgrounds will add to the volume. Additionally, the road carries detouring traffic from I-95 North to Route 4 South and back again from Route 4 North to I-95 South.

Another major project for Traffic Engineering has been a changeover to light-emitting diode (LED) technology for all traffic signal heads in Rhode Island. By late 2006, 770 traffic signals had been upgraded to LED. The work was conducted partly by Highway Maintenance crews with the rest refitted through a low-bid construction project.

The result of the changeover is a huge savings in electricity costs, with an annual savings of \$530,000. Additionally, RIDOT has received about \$600,000 in

rebates from National Grid. Together the savings and rebates roughly paid for the entire \$1 million conversion program. The savings continue in terms of maintenance as well. Since the new LEDs last from five to 10 years, as compared with about one year for the old incandescent bulbs, RIDOT will save money with fewer calls for lamp replacements.

Traffic Engineering also is charged with reviewing what are classified as high hazard intersections – places that have 15 or more accidents per year, based on accident data RIDOT obtains from all Rhode Island law enforcement agencies. The data

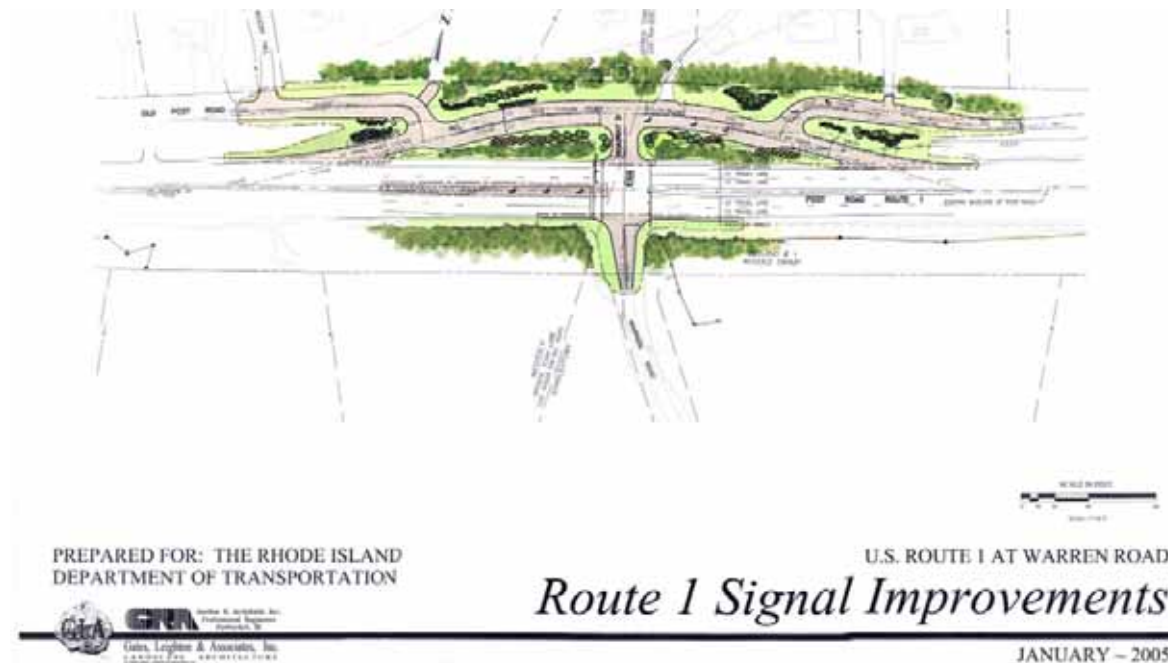
drives Traffic Engineering's planning for potential improvements. Sometimes this involves installing a signal at an intersection that never had one, removing a signal, reconfiguring lanes, or making other intersection geometry changes.

Another major task for Traffic Engineering is signal optimization. This involves a wide gamut of

are set to be interconnected in 2007.

Traffic Engineering also has a hand in signing and striping of roads. All roads are restriped every two years using an outside contractor. Some guardrail work, such as along the Wampanoag Trail in East Providence and Barrington, falls under Traffic Engineer's guise. Traffic Engineering is studying other changes for Wampanoag Trail, including the use of roundabouts or overpasses.

Another major role for Traffic Engineering is its connection with the State Traffic Commission. The department responds to complaints from citizens about intersections or other traffic control features and works with the State Traffic Commission to implement changes. Traffic Engineering also provides support services for the Commission, such as performing studies, writing letters, making recommendations, and



The above illustration shows a reconfigured intersection on Route 1 in Charlestown, including new jughandles to aid motorists seeking to reverse direction on Route 1.

responsibilities, including upgrading existing signal equipment and taking traffic counts and adjusting signal phasing time as needed.

One goal is to interconnect signals where feasible, such as on a busy commercial corridor. The signals are timed to create a "green band" which allows drivers on an arterial roadway to hit all green lights. If someone is coming from a cross street, he or she will hit the next red and then hit all greens. In 2006 RIDOT completed a project on East Main Road in Middletown in which the traffic signals were interconnected. Three intersections on Cranston Street on the Cranston/Providence line

other tasks.

Traffic Engineering also has review authority over the use of automated cameras for red light enforcement activity. Currently, the City of Providence has a half dozen intersections equipped with the technology and RIDOT is reviewing applications for others.

Before such technology is approved, Traffic Engineering performs a site evaluation and determines if any other changes are needed that might be leading to excessive red light running, such as poor line of sight, lack of signage or some other functional deficiency.

Intermodal Planning

Spearheading alternative transportation projects

38

Intermodal Planning is one of the busiest sections of RIDOT, taking the lead on a major expansion of passenger rail service in Rhode Island with new stations planned in the next three years in Warwick and Wickford. Beyond those high-profile efforts, Intermodal Planning has its hand in a host of other projects, all having to do with alternative transportation projects or those making improvements to serve to beautify the roadways.

These efforts fall into two major project categories, those called Enhancement Projects and those done under the Congestion Mitigation and Air Quality (CMAQ) Program. The former is a yearly effort, initiated by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), which requires RIDOT to commit 10 percent of its annual surface transportation program funds to projects that address the environmental impacts of transportation and highway construction. The



Photo: Chuck Aube

Dignitaries gather on Cliff Walk for a dedication ceremony in May 2006 to mark the restoration of the southern end of the trail in Newport.



Photo: Chuck Aube

RIDOT completed this Enhancement Project in late 2006 in Portsmouth's Island neighborhood, rehabilitating sidewalks and adding decorative lighting.

CMAQ Program, also established by ISTEA, provides funds to support projects aimed at improving air quality.

Included in the Enhancement Program is RIDOT's aggressive bike path development program (detailed on Pages 22-23). The 12 categories of projects include: bicycle and pedestrian facilities; safety and educational activities for pedestrians and bicyclists; acquisition of scenic

easements and scenic or historic sites; scenic or historic highway programs, including tourist and welcome center activities; landscape and scenic beautification; historic preservation; rehabilitation and operation of historic transportation buildings, structures, or facilities; preservation of abandoned railway corridors; control and removal of outdoor advertising; archaeological planning and research; environmental mitigation to address water pollution due to highway runoff or to reduce vehicle wildlife mortality while maintaining habitat connectivity; and establishing surface transportation museums.

Among major projects in 2006 was the creation of Avenue of the Arts in Providence. This \$5 million project involved the total reconstruction of a short street that passes in front of the Veterans Memorial Auditorium, home to the Rhode Island

Philharmonic Orchestra, as well as sidewalks in the area and resurfacing of adjacent roads. The project created a pedestrian-friendly plaza featuring stamped concrete, decorative bollards, built it “wall seats” and decorative lighting. The plaza was dedicated in December 2006 and work was scheduled to be completed by Spring 2007.

Another major project that wrapped up in 2006 was the restoration of a portion of Cliff Walk in Newport. This 3.5-mile pedestrian trail hugs the rugged Newport coastline, with dramatic views of the ocean to one side, and to the other, of some of the most opulent of Newport’s historic mansions.

This \$4.3 million contract focused on the southern section of the Cliff Walk, which covers a little over two miles from Ruggles Avenue to Bailey’s Beach. Work consisted of repair to undermined sections, thereby preventing further erosion of the path and replacement of the wooden bridge at Rough Point with a beautiful new structure that more resembles the historical arch stone bridge



Photo: Chuck Aube

Former RIDOT Director James R. Capaldi, Governor Donald Carcieri and Providence Mayor David Cicilline take the first ride on Avenue of the Arts in Providence during its dedication in December 2006.



Photo: Chuck Aube

Dutch Island Light, located off Bonnet Shores in Narragansett, is slated for repainting in 2007.

that was present at the turn of last century. Numerous other improvements were made, including the installation of benches, decorative and safety railing and signs and markers. Where prudent, the walking area was reconstructed with either concrete or crushed blue stone.

Other Enhancement Program projects in 2006 included the restoration of a quarter-mile of a historic stone wall in Little Compton; streetscape projects along Route 107 in Burrillville, King Street in East Greenwich, and the Island Park section of Portsmouth; and small boat landings on the Blackstone and Wood rivers. Additionally, the Program funded engineering work for various other projects, including Washington Square streetscape improvements in Newport, renovations to North Light on Block Island and the entrance to Smith’s Castle, a historic home site in North Kingstown.

In 2007, an equally diverse set of Enhancement

projects is planned. Among them is the relocation of a historic signal tower at Kingston Station in South Kingstown. Preparation for the signal tower’s move will involve cutting the tower below the roof, placing it on its side, and loading both pieces onto a flatbed truck.

Two other large-scale projects planned for 2007 are streetscape projects on Westminster Street and Manton Avenue in Providence. Both projects are pending funding negotiation with the City of Providence.

Other planned Enhancement Program projects in 2007 include completing work on restoration of the former Woonsocket Train Depot; lighthouse improvements at Rose Island in Newport, Dutch Island, off Narragansett and Southeast Light on Block Island; a river launch on the Blackstone River in Woonsocket; sidewalk improvements on Market Street in Warren; and the development of Depot Square Park, a small park in Hopkinton.

Environmental

Protecting the landscape

40

The Environmental Section touches nearly all RIDOT projects in that it reviews projects for compliance with applicable environmental regulations and secures necessary environmental permits. Included in the section are the Natural Resources Unit and the Cultural Resources Unit.

Natural Resources interfaces with a number of State and Federal agencies to facilitate permitting by reviewing plans and specifications for RIDOT construction projects. Chief among them are the Rhode Island Department of Environmental Management (RIDEM), the (Rhode Island) Coastal Resources Management Council, the U.S. Environmental Protection Agency, the U.S. Coast Guard and the Army Corps of Engineers. It may also work with other agencies or municipalities as needed.

Another prime role for Natural Resources is the handling of storm water runoff. Storm water runoff is regulated under the National Pollutant Discharge Elimination System Phase II program. This is administered through RIDEM, under the Rhode Island National Pollutant Discharge Elimination System (RIPDES) program. Under RIPDES, RIDOT is required to implement and use Best Management Practices to address minimum control measures that will help in reducing the impact of storm water runoff. RIDOT developed a Storm Water Management Program Plan (SWMPP) that outlines the goals and practices that RIDOT will use to address the minimum control measures.

Since March 2003, the Natural Resources Unit has been coordinating this program for RIDOT. Each year, annual reports are prepared documenting RIDOT's achievements towards the SWMPP. To date, RIDOT has accomplished the following to reduce storm water impacts:

- Minimum Measure 1: Public Education and

Outreach – RIDOT has contracted with the University of Rhode Island's Cooperative Extension Unit to provide education and training about the impacts of storm water discharges to Rhode Island municipalities and State officials. Additionally, a new web page has also been added to the RIDOT web site at <http://www.dot.state.ri.us/programs/enviro>.

- Minimum Measure 2: Public Participation/Involvement – RIDOT is required to comply with State and local public notice requirements. Each year, the public is allowed to comment on the annual reports that are submitted to RIDEM, as well as comment on the SWMPP. Both documents undergo a public notice period before submission to RIDEM.

- Minimum Measure 3: Illicit Discharge Detection and Elimination – RIDOT has been inspecting and mapping drainage outfalls for the past three years. To date, over 3,900 outfalls have been identified, mapped, and described. RIDOT has also identified and mapped storm water treatment units, catch basins on National Highway System roads, and Physical Alteration Permit Application interconnections.

- Minimum Measure 4: Construction Site Runoff Control – RIDOT has continued several practices that control construction site runoff. RIDOT



Photo: Allison LeBlanc

This photo shows an advanced drainage structure, pond and marsh area designed to remove sediment and pollutants from highway runoff, located adjacent to the Gano Street off-ramp from I-195 in Providence.

requires specific erosion and sedimentation controls to be used on-site, weekly inspections, and SWPPPs to be created by the consultants during the design phase.

- Minimum Measure 5: Post-Construction Runoff Control – RIDOT requires all new construction meet State Water Quality Standards. An expanded as-built plan policy will be developed to aid in the maintenance requirements of the site.

- Minimum Measure 6: Good Housekeeping/Pollution Prevention – Many daily good housekeeping practices are already in place. RIDOT continues regular maintenance of catch basins and drainage structures, conducts annual street sweeping, has implemented an anti-icing program, and each

Maintenance facility has a spill prevention, control, and countermeasure plan, and also a storm water pollution prevention plan. Standard operating procedures are being developed for regular maintenance of storm water swales and drainage structures in wetlands. A new asset management software system is also being purchased to aid in the documentation of RIDOT maintenance actions.

In addition to the Phase II program, money is allocated each year to upgrade existing systems, using a statewide pollution abatement list developed with the RIDEM as a guide to determine which projects to work on first. In some cases, a correction could be as simple as replacing a crushed pipe or as complex as replacing a conventional catch basin with new drainage technology such as swirl chamber drains or forebay artificial wetlands to remove as many solid, suspended and dissolved contaminants as possible before storm water is discharged to a water body. Such retrofits count towards RIDOT's progress in addressing the Phase II minimum measures.

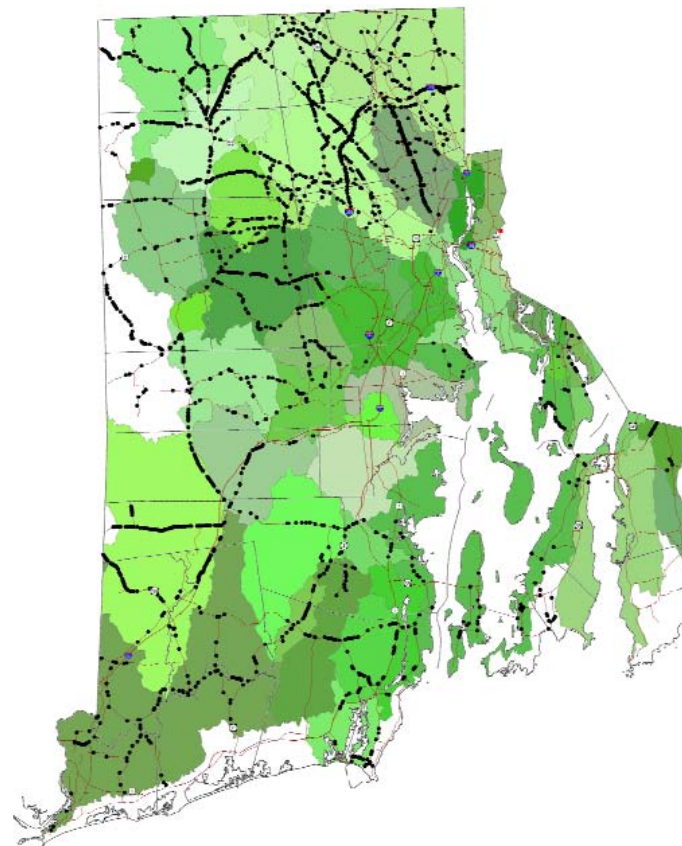
An equally busy division is the Cultural Resources Unit, which also must closely coordinate with other agencies, including historical organiza-

tions and Federally-recognized tribes, in regard to RIDOT projects and potential impacts with historic and/or cultural resources. Cultural Resources undertakes studies that identify these resources and any potential impacts to these resources by transportation projects. Historic and cultural resources are identified as significant buildings, structures (such as bridges), landscapes, monuments, districts, archaeological sites and historic cemeteries.

During 2006, the Cultural Resources Unit staff reviewed a number of projects that involved efforts to identify potentially-significant archaeological sites such as: the Warwick-East Greenwich Bicycle Network, the Coventry Greenway, the Post Road/Route 1 Intersections Improvement Project in Charlestown and Westerly, and the Capron Bridge Replacement Project in Smithfield. Among the several archaeological sites discovered were a 2,000-year-old Native American campsite, a late 18th century farmstead, a mid 19th century textile worker's home and a late 19th century grist mill.

One of the more unusual projects requiring staff involvement consisted of the removal of a portion of an historic cemetery in September and October 2006. In order to restore a failed drainage system at Route 37 and Pontiac Avenue in Cranston, approximately 70 human burials dating from 1887 to 1918 required removal from the site of a proposed new drainage outfall.

The removal of the remains using archaeological techniques was conducted in compliance with the State Historic Cemeteries Act and a Cranston city ordinance on grave removal. The burials comprise a small portion of a much larger (3.4 acre) cemetery, a major portion of which now lies under Route 37. The cemetery was one of four State



This map is a work in progress that shows the precise location of drainage outfalls in Rhode Island. The colored shadings represent watershed sub-basins and the black dots represent GPS-marked outfall locations. RIDOT will be working with a consultant to map outfalls along divided highways.

Institution cemeteries and those interred were persons who had died at the State Prison, State Almshouse, State Hospital and State Insane Asylum and whose remains were not claimed by next-of-kin or friends. The remains are to be re-interred in Spring 2007 at another State Institution cemetery. The project also required approvals and permits from the R.I. State Historical Preservation & Heritage Commission, the State Medical Examiner's Office and the Department of Mental Health, Retardation & Hospitals.



Photo: Charles St. Martin

RIDOT archeologist Michael Hebert examines a grave shaft uncovered during a drainage project near Route 37 in Cranston.

Highway & Bridge Maintenance

Keeping the streets clean and clear

Often the face of RIDOT are the roads people drive on each day, and the Highway and Bridge Maintenance division performs many task throughout the year to keep clean and clear.

The success of the Maintenance Division, with its highly visible duties of highway snow removal, grass cutting, sweeping, litter removal, traffic signals, and overhead lighting systems, is directly linked to the overall success of the Department.

Available 24/7, Maintenance is on the front lines at all times. During the past two years, there has been a reorganization of activities and personnel, and a consolidation of efforts and facilities, to help the Division better serve the public.

To aid in snow removal efforts, and to better

manage winter storm operations, the RIDOT's Management Information Systems section worked to create a state-of-the-art system for Maintenance that will be utilized for all State snow routes. These snow routes are now on web-based GIS maps, with driver and vendor information for routes.

To assist in road cleaning activities, and to expand on the level of attention paid o that task, Maintenance increased the Department of Corrections litter crews.

The Department is also looking to expand the

volunteer Adopt-a-Highway program, which provides sponsorship of two miles of highway for group litter removal, and the Sponsor a Highway

In 2006, Maintenance and its partners at the Department of Corrections collected 66,242 bags of litter.

Program, a privatized program where sponsors pay a fee to have a section of highway cleaned, and get recognized with a highway sign. Additionally, a major emphasis has

been placed on the volunteer Adopt-a-Spot program to help the State in its litter control efforts.

In 2006, Maintenance and its partners at the Department of Corrections collected 66,242 bags



Photo: Fran Segerson

A line of State snow plow trucks parked behind the Highway and Bridge Maintenance headquarters building in Warwick.

of litter and swept all of the State-maintained roads at least once. This amounted to 1,100 miles, or about 3,000 lane miles. A new street sweeper obtained in 2005 is just one of the many tools used by Maintenance to help keep the state clean.

Recognizing that there are too many lights that are out on the highways, the Department has also placed a strong emphasis on getting the lights relit through the efforts of RIDOT Maintenance crews. Over the long term, however, a plan is being developed to replace the lighting systems on all the limited access highways. This amounts to approximately 92 miles of State highway using 6,900 lights on about 5,900 poles.

In the meantime, all current and future construction project activities dealing with traffic lighting, signaling, signing and striping will be incorporated within the Maintenance Division.

This consolidation will enable RIDOT to better manage and coordinate their resource investments in traffic operations.



Photos: Chuck Aube

Maintenance hosted a reception in February 2006 with U.S. Deputy Secretary of Transportation Maria Cino. Above, dignitaries tour Maintenance's sign shop and below, Gayle Blasi, an Electrical Inspector, shows Cino the new signal switching technology RIDOT is using.



Two operators from Maintenance's Gloucester garage earned some serious bragging rights as Wayne DeRosier (left) and Randy Brackett captured first place in statewide and regional snow plow rodeo events.



Public Affairs

One big map and a host of events and special celebrations to mark historic year for RIDOT

The activity level of the Public Affairs division, also called the Office of Communications, typically mirrors that of RIDOT as a whole. Given the numerous and historic projects taking place this year, the division has been very busy.

Public Affairs handles a variety of communications and media relations tasks, including routine press inquiries for information and press event planning for significant project milestones such as groundbreakings, dedications and other celebratory occasions. The past year provided no shortage of material for the division.

Many divisions of RIDOT were involved in this year's marquee projects, the old Jamestown Bridge demolition and the water transport and installation of the Iway's new Providence River Bridge. Public Affairs, however, took sole responsibility over a

project to mark Rhode Island's celebration of the 50th anniversary of the Interstate system. To honor the anniversary of President Dwight D. Eisenhower's signing of the Federal-Aid Highway Act of 1956, Public Affairs commissioned The Biggest Map in the Smallest State project.

The 30- by 40-foot map of Rhode Island was carved into pieces, much like a giant puzzle, with each piece in the shape of the geographic boundaries of Rhode Island's 39 cities and towns. The pieces were then distributed to elementary-age school children throughout the state, who decorated them with a transportation theme. The map was reassembled for an unveiling ceremony on June 29, 2006 at Eisenhower's former summer home in Fort Adams in Newport. The map was later displayed in the atrium of the Rhode Island Department of Administration.

Another major effort this year was an event for the press and dignitaries to view the first explosive demolition of

the old Jamestown Bridge on April 18, 2006. The division arranged to have a heated, tented event on the front lawn of a private residence with a direct view of the bridge. The event required great logistical planning with a remote parking and shuttle bus system, and limited room to accommodate broadcast media at the site. More than 150 people came to the event, and media outlets throughout south-

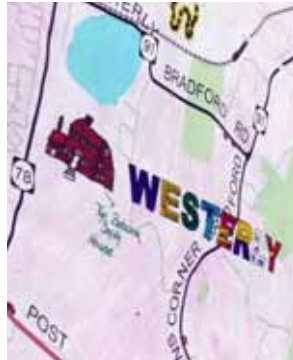


Photo: Charles St. Martin
A close-up of the Biggest Map in the Smallest State.



Photo: Charles St. Martin

The Biggest Map in the Smallest State is publicly unveiled at a ceremony at the Eisenhower House in Fort Adams State Park in Newport.



Photo: Heidi Cote

The atrium at the Department of Administration was the ideal place to display the Biggest Map in the Smallest State.

ern New England attended. Stories of the successful demolition were rebroadcast nationally and as far away as the United Kingdom.

Given that the April 18 event was only the first

demolition, the division continually worked throughout the summer and into the fall to keep the media and the public aware of future demolition events. Each blast required

some closure of the adjacent Jamestown-Verrazzano Bridge, and the division developed a print and radio advertising campaign for major demolitions to keep motorists informed.

Another significant event for RIDOT this year was the floating of the Iway's new Providence River Bridge. The division coordinated a series of press viewings for each step of the final one-week process of moving the 5.5-million pound bridge from its assembly point in the Quonset Business Park to its new home just south of the Fox Point Hurricane Barrier in Providence. The division also worked with the Providence Children's Museum to organize an exhibit opening in Fall 2006 that centers on the entire Iway project.

Other major events the division organized or helped to organize included the dedica-



Photo: Chuck Aube

Former RIDOT Director James R. Capaldi (at left) participates in a ribbon cutting for a newly restored section of Cliff Walk in Newport.

tion of the Pawtucket Layover Facility and the groundbreaking for the Warwick Intermodal Facility, both for commuter rail; a dedication of a newly restored section of Cliff Walk in Newport; dedication of the Avenue of the Arts in Providence; and a groundbreaking for Waterfront Drive in East Providence.

In addition to the aforementioned activities, the division maintains RIDOT's website (www.dot.state.ri.us), compiles a quarterly newsletter and publishes RIDOT's annual report.



Photo: Chuck Aube

The Office of Communications assisted Dunkin' Donuts with an event in September to thank workers on the Iway project with a cup of coffee.



Photo: Chuck Aube

Among the biggest events the Office of Communications organized was a visit in February 2006 by U.S. Transportation Deputy Secretary Maria Cino (above, center). At right, Governor Donald Carcieri. At left, former RIDOT Director James R. Capaldi.



Photo: Kaitlin Yapchaian

Above, dignitaries gather at a mock plunger during the event organized to celebrate the first explosive demolition of the old Jamestown Bridge in April.

Transportation Management Center

RIDOT's hub of congestion mitigation

RhodeWays, the program housed in RIDOT's Transportation Management Center (TMC), has grown by leaps and bounds since it was initiated in the early 1990s, from a basic incident management program to a statewide and regional program that is the focal point for transportation technology initiatives.

The TMC promotes, implements, and operates systems that are intended to work together from a central control point to "minimize the economic, environmental, and safety impacts of planned and unplanned roadway incidents." These systems are commonly referred to as Intelligent Transportation Systems (ITS).

Work is ongoing with multiple stakeholders from within the Department as well as throughout the State and region to promote the use of ITS, provide for more effective incident management and provide for the safety of the motoring public as well as



An example of one of the many traffic cameras the TMC uses to watch over Rhode Island's busiest highways.



Above, an overhead dynamic message sign on I-95 South in Pawtucket alerts motorists of construction activities that could lead to congestion.

incident responders. The TMC uses many tools to do this, including its Website (www.tmc.state.ri.us), the Traffic Channel (Cox Communications Digital Cable Channel 124), the Highway Advisory Radio system and dynamic message signs.

The TMC was very active in 2006. The CARS 511 system gained more recognition and with that, more call volume. Camera installations have increased to more than 90 critical sites with more coming in response to requests from stakeholders who recognize the value of having "eyes" on the road to detect and respond to incidents quickly. Additional Highway Advisory Radios have been incorporated into significant construction projects as well as cameras – a result of the adoption of mainstreaming which has provided decision-makers within the department the opportunity to manage projects from off-site.

A systems integration proposal was written and responses are under review to provide for seamless

operator interfaces to all the systems working in the TMC. Since research is key to advancing the program, the TMC continues to explore and test new and innovative technologies.

The TMC effectively used ITS equipment deployed in Massachusetts and Connecticut during the recent Jamestown Bridge Demolition and in conjunction with the Westerly Police Department to manage beach traffic. As an active member of the I-95 Corridor Coalition, the TMC continues to encourage regional and local partnerships. The RIDOT TMC is the central point of contact for its multiple stakeholders, especially local city and town incident responders.

The RhodeWays Incident Management Task Force provides a forum for participants to understand the benefits of ITS while encouraging greater participation in the development of the program. As technology costs are lowered and new communication systems are emerging, the TMC has begun

to implement a goal to share resources with local cities and towns and the media. At present, the City of Providence and E911 are receiving video transmissions from the TMC Control Room as are major media outlets. TMC provides technical support to stakeholders wishing to receive video feeds as well as technical specifications when requested.

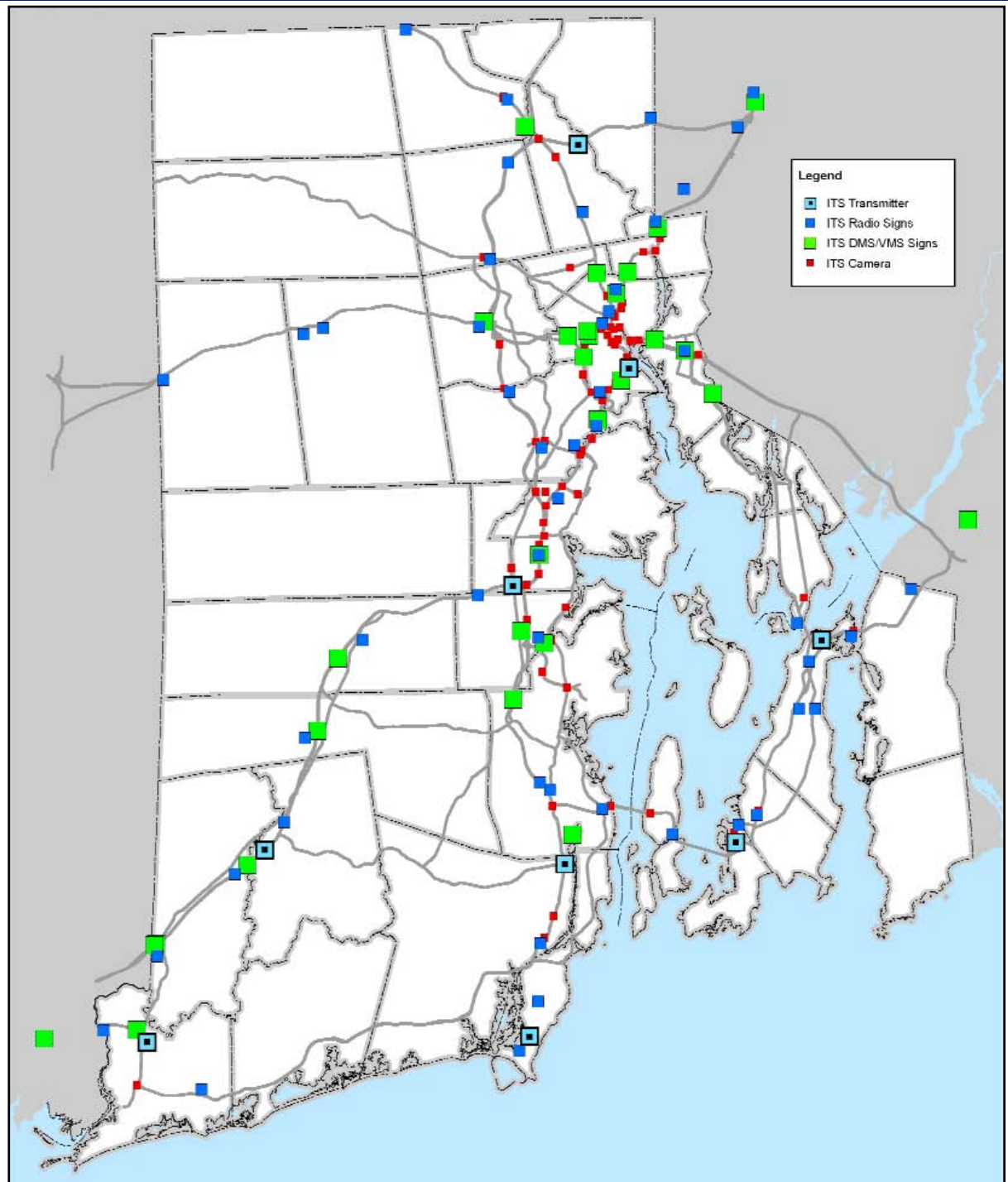
A key element to the program is the ability to measure performance. Over the past several years, the TMC has worked to improve the quantity and quality of incident reports available for performance analysis. The RhodeWays database enhancements implemented during this past year will enable more details to be logged and will provide for an updated equipment tracking method to ensure that



Above, two operators in the TMC Control Room monitor traffic conditions with a wall of streaming video images in front of them.

equipment is maintained. This information is now available on the TMC web site.

Transportation system users are realizing the ITS vision as promoted by the Federal Highway Administration. That vision is one that incorporates a wide variety of applications that integrate surface transportation infrastructure with the vehicles that use it. By encouraging participation from the TMC's stakeholders and increasing partnerships, RIDOT has dramatically improved operational capabilities and expanded the distribution of traveler information – a benefit to the State and region.



Above, the locations of traffic cameras, message signs and Highway Advisory Radio transmitters and signs.

Real Estate

Securing agreements and setting policy on a wide range of issues

The Real Estate section has many responsibilities that all have an element of land ownership and the use of land on and near State-owned transportation infrastructure.

These tasks fall under two main areas: Property Management and Acquisition. Property Management tends to be busier than Acquisition, however land acquisition is a vital component for RIDOT. Real Estate often clears the way for projects to move forward with a key acquisition that in its absence, would be significantly detrimental to a project's success or require major redesign work.

Some of the property acquired in the past year involve some of RIDOT's highest-profile projects including residential and commercial properties at the Sakonnet River Bridge project in Tiverton. Real Estate acquired three residential parcels and successfully relocated the families. One commercial building containing three businesses was acquired and has been vacated and a second commercial structure containing a marina, along with two other businesses, has been recently acquired. Relocation assistance is on-going.

At the Warwick Intermodal Station project, remaining land has been acquired with easements that are needed to build the station. Real Estate also is in talks with Amtrak regarding needed easements. At the other commuter train project at Wickford Junction, RIDOT acquired land from four property owners and families have been successfully relocated. Real Estate also is involved in negotiations with Amtrak and a private developer regarding additional land agreements.

Lesser-known projects for Real Estate include ongoing negotiations for seven parcels of land currently serving industrial buildings in the Quonset Business Park in North Kingstown. They will be

cleared to make room for expansion of the adjacent Army National Guard facility at Quonset State Airport. Real Estate also has acquired four parcels in Warwick for the long-awaited Apponaug Circulator Improvement Project. Seven small busi-

In the past fiscal year, the Office of Property Management generated more than \$1.5 million in income from sales, licenses, and permit fees.

nesses were being relocated at the end of 2006.

Real Estate's right-of-way staff has completed the acquisition of rights-of-way consisting of land and easements necessary for various highway, traffic, and bridge construction projects. In 2006, rights-of-way were acquired for Hartford Avenue in Johnston, Route 1 safety improvements in Westerly/Charlestown, improvements to Providence Street in West Warwick, and for Route 44 drainage improvements in Glocester.

Real Estate staff also continued to work with the Intermodal Planning Section and public agencies to insure compliance with Federal regulations in their efforts to appraise and negotiate for the purchase of right-of-way needed to for Enhancement projects.

In the area of property management, Real Estate has been involved in a much-debated issue, that being the revision and update of RIDOT's Outdoor Advertising Rules and Regulations. These govern the control, erection, and maintenance of outdoor advertising signs and billboards in all areas visible

from the Interstate and Federal-Aid Primary System of highways in the State. These also addressed newer technology outdoor advertising, including LED-based billboards.

Real Estate also made 103 presentations before the State Properties Committee in fiscal year 2006. These presentations culminated in the final disposition of conveyances, license and lease agreements (including sign licenses), and easements, which ultimately provided significant revenue to the State in addition to bringing closure to multiple project files. In the past fiscal year the Office of Property Management generated more than \$1.5 million in income from sales, licenses, and permit fees. Property Management Unit also successfully completed the research necessary to identify expired License Agreements between the State and various public and private entities for use of State land.

One of the lesser-known tasks Real Estate has been the execution of letters of authorization for various movie and television projects. Rhode Island has become a popular setting for the entertainment industry, and as such producers have sought various locations on or near transportation infrastructure for shoots.

The Property Management Unit has generated and executed letters of authorization and assisted on the feature films and television programs including Showtime Television Network's the "Brotherhood," Lenz Films for the filming of the feature film, "Happy Holidays," and the CBS Television Network and Warner Brothers Television for the television series, "Waterfront." The Property Management Unit also assisted Have No Fear Productions in its search for filming locations for the feature film, "Underdog," which was shot on many locations in Providence.

Research & Technology Development

Probing new technologies to expedite and enhance transportation projects

The Research and Technology Development Section, with a staff of eight persons, has primary Departmental responsibility for transportation research; product evaluation and technology transfer; engineering review of highway and bridge design projects; geotechnical review and consultation on subsurface foundation design and environmental contamination issues; and, since 1997, administration of the RIDOT Pavement Preservation Program. The section also, at the request of the Chief Engineer, undertakes certain additional projects that require specialized experience or expertise.

The RIDOT research program is administered by Research and Technology. With input from the RIDOT Research Advisory Committee (RRAC), the section assesses and coordinates recommendations for the selection of research topics for the annual research program and, at the conclusion of each research project, makes recommendations for the implementation of the research findings.

Some research areas currently being pursued are intelligent transportation (message signs), new modified asphalt, high performance concrete, metals, highway vegetation, environmental, over-size and over-weight truck permitting systems, and systems related to asset management and geotechnical data.

The section also is actively involved in regional and national research, working with the New England Transportation Consortium and the American Association of State Highway and

Transportation Officials (AASHTO). National involvement includes membership on the AASHTO Research Advisory Committee and on the AASHTO Standing Committee on Research. Through these memberships, the Department participates in determining the direction of regional and national research.

The Product Evaluation Unit of Research and Technology evaluates all new products, technologies,



Photo: Ian Frament

RIDOT Principal Chemist Michael Foisey investigating new cement chemistry.

processes, and equipment for use on RIDOT construction projects and maintains a listing of approved products and vendors. The unit evaluates contractor requests to use proprietary products on RIDOT projects. In collaboration with the Northeast Protective Coatings Committee, it is responsible for evaluating paints and other coatings. Research & Technology also participates in the National Transportation Product Evaluation Program. Additionally, the unit serves as part of the technology information center of the Department, planning and organizing various workshops and seminars.

The Engineering Review Unit provides technical support to the Design, Construction, and Maintenance Sections. Research and Technology engineers review the plans of all highway and bridge design projects and recommend new technologies, materials, and processes; draft and review job-specif-

ic and standard specifications; and provide unique Departmental expertise in Portland cement concrete, asphalt pavement, and coating technologies.

The Geotechnical Review Unit performs the Department's primary geotechnical, geohydrologic, and subsurface environmental review of proposed projects. This includes assessment of structure foundation design as well as the review and assessment of soil and groundwater contamination issues. Section staff members have been instrumental in introducing geosynthetics, reinforced earth, and mechanically stabilized earth retaining wall technology to the Department.

The RIDOT Pavement Preservation Program is administered by Research and Technology. Pavement preservation is the practice of extending a road's service life by using protective surface treatments in a timely manner, making the surface less permeable, thus preventing water penetration that will destroy the road foundation and could lead to destruction of the road. RIDOT's entire pavement preservation program has been recognized by the Federal Highway Administration as one of the best in the country, and an example other states' DOTs should follow.

In 1997, an annual crack sealing program was initiated. Rubberized chip seal, Novachip, and thin elastomeric overlay have since been introduced. In 2006, 72.4 miles of state highway were crack sealed, 24.4 miles were rubberized asphalt chip sealed, and 6.5 miles were surfaced with a thin elastomeric overlay.

To improve the efficiency of the Pavement Preservation Program, the section is working with the Management Information Systems section to consolidate the data bases of the various sections and to enhance the geographic information system currently in use.



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